INDEPENDENT MAINTENANCE

WESTERN EUROPE 198[illegible] - 199[illegible]

INPUT

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Independent Maintenance in Western Europe 1988-1993

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Abstract

This report surveys the Western European market for independent maintenance and contains the results of research conducted by INPUT during 1988. The report is produced as part of INPUT's Customer Service Programme—Europe (CSPE).

The report examines user and vendor perceptions of independent maintenance and discusses the part played by hardware equipment manufacturers in this market. A forecast of the growth of independent maintenance in Western Europe for the period 1988 to 1993 is given in the report.

In addition, the report includes an analysis of individual country markets, namely: France, Italy, the Netherlands, Spain, Sweden, the U.K. and West Germany. Other topics discussed in this report are: the evolution of independent maintenance in Europe, market opportunities, quality standards, mergers and acquisitions, and competition.

This report contains 158 pages, including 65 exhibits.

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I

Introduction

I

Introduction

This report has been produced as part of INPUT's Customer Services Programme—Europe. This programme provides a comprehensive and ongoing review of customer services markets in Western Europe and an analysis and evaluation of important trends in the customer services business. The programme is based on a survey of user attitudes and levels of satisfaction together with interviews with leading customer services executives in Europe.

A Objective

The continuing growth of third-party maintenance (TPM) activity remains a significant factor for the customer services business. Over the last few years, TPM has grown to become an area of high focus for equipment manufacturers to the extent that a number of these vendors have begun to develop their own 'third-party maintenance' capability. INPUT has elected to term this alternative maintenance market, from equipment manufacturers, dealers and distributors and from TPM companies the 'independent maintenance' market. This report sets out to provide a comprehensive analysis of this market in Western Europe. Specifically the objectives of the report are:

- To provide an assessment of the total size of the independent maintenance market in Western Europe and in individual countries for 1987

- To provide a five-year forecast of these markets with an indication of the major driving and inhibiting forces that affect the growth

- To highlight other major environmental factors that will affect the growth of independent maintenance, including the incidence of manufacturer-provided independent maintenance and user attitudes to the use of third-party vendors

- To provide a directory of TPM vendors active in the Western European markets

- To provide a broad set of recommendations for positive action by which vendors can optimise their approach to taking advantage of the opportunities presented by this market

This report thus provides industry practitioners with a complete overview of independent maintenance markets from both a vendor and user perspective

B Scope

This report assesses the entire market for 'independent maintenance'. INPUT defines this as all maintenance activity for computer and data communications equipment not provided by the manufacturer of the equipment. In detail this market can be analysed as consisting of three subsectors of activity:

- Maintenance conducted by completely independent—and thus usually referred to as Third-Party Maintenance (TPM)—vendors that are solely or partly devoted to the provision of this activity

- Maintenance conducted by an organisation (typically a dealer or value-added reseller) that is responsible for the sale of the equipment but is not the manufacturer

- Manufacturer 'independent maintenance'—that is the activity of maintenance by an equipment manufacturer of equipment that is not supplied or badge engineered by that vendor.

The report assesses the size of the total independent maintenance market analysed across these three subcomponents for the base year of 1987 and provides a five-year forecast for the period 1988 - 1993.

C
Methodology

The field research for this study was conducted between May and July 1988.

Vendor data was obtained by the analysis of telephone interviews and mail questionnaires with 75 vendors of TPM services throughout Western Europe.

User data was obtained from INPUT's 1988 survey of Customer Services markets and is based on the responses of 1,348 European managers responsible for data processing operations.

D
Report Structure

The remaining chapters of this report are organised as follows:

- Chapter II contains the Executive Overview, which provides a concise summary of the whole report.
- Chapter III provides an overview of the forces currently shaping the European market place for independent maintenance.
- Chapter IV provides a forecast for the individual country markets for the period 1988 to 1993.
- Chapter V analyses user views of independent maintenance.
- Chapter VI contains conclusions and recommendations for independent maintenance vendors' future plans.

Appendices A through H give profiles of TPM vendors in the different European countries.

Appendix I reconciles INPUT's 1988 and 1987 forecasts for the Western European TPM market.

II

Executive Overview

II

Executive Overview

A

The Western European Independent Maintenance Market

INPUT estimates that the Western European independent maintenance market in 1987 totalled $945 million and is forecast to grow at an average annual rate of 16% over the 6 year period 1987 - 1993. The market will reach an estimated value of $2,360 million in 1993 (See Exhibit II-1).

Within Western Europe, the largest country market is the United Kingdom, estimated by INPUT at just over $300 million in 1987. An average annual growth rate of 16% is anticipated, resulting in a market value of $810 million in 1993.

The fastest growing market in Western Europe is Spain, with an expected average annual growth rate of 27% over the next six year period.

One key change in the structure of the market began in 1987 and gathered momentum during the first half of 1988. This critical element is the entry of major computer manufacturers into the TPM market place. The first manufacturer to openly declare its intentions was Olivetti. Other manufacturers are expected to follow this trend.

In order to achieve success in obtaining large contracts, TPM vendors have subcontracted to other vendors, so as to be able to offer a 'total service solution'. This is a key strategy of TPM vendors when competing with the much larger forces of the manufacturer.

EXHIBIT II-1

THE WESTERN EUROPEAN INDEPENDENT MAINTENANCE MARKET

- Largest Market: U.K. $300M in 1987
- Fastest Growth: Spain—AAGR 27%
- Hardware Manufacturers' Entry
- Prime Contracting

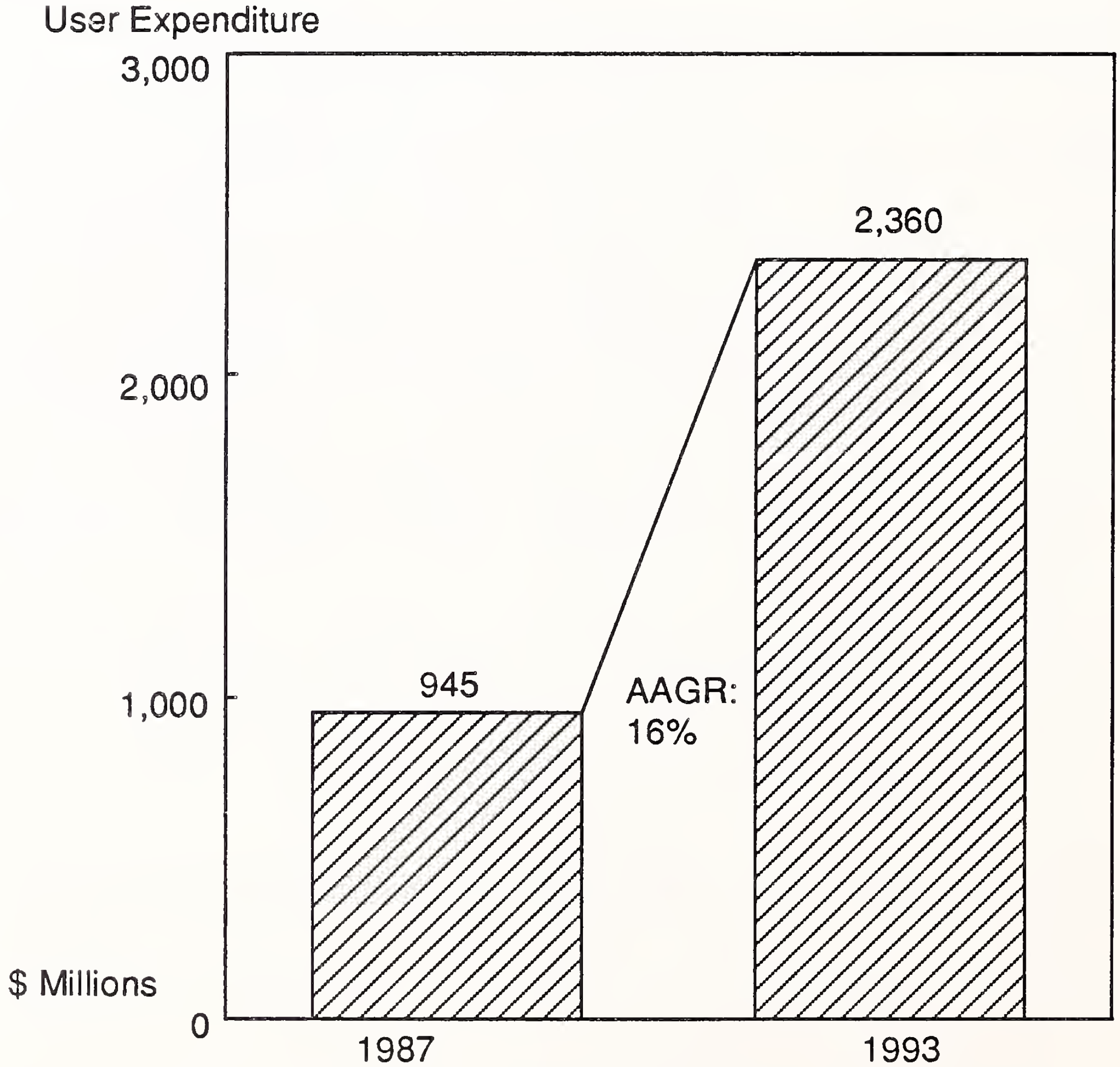


EXHIBIT II-2

INDEPENDENT MAINTENANCE MARKET DYNAMICS

- Geographic Characteristics Stimulating TPM Activity
- Non-European Product Sales Providing New TPM Opportunities
- TPM Vendors Becoming Multinational
- TPM Vendors Developing Critical Mass through Mergers and Acquisitions

B Independent Maintenance Market Dynamics

In addition to the emergence of the computer equipment manufacturers into the independent maintenance market there exist other significant factors that are affecting the dynamics of the market. Four key factors are listed in Exhibit II-2.

The growth and convergence of information technology is currently leading to the geographic dispersion of computer installations outside the main centres of commerce and industry. Major computer manufacturers with a wide geographic spread of resources can capitalise on the TPM opportunities that this presents.

New TPM opportunities are being created by the increasing number of computer products being sold in Europe by manufacturers not having a local service and support network. For example, Stratus has a service agreement with the Dutch TPM vendor DTC Service in the Netherlands.

The trend for TPM vendors to diversify geographically is gaining popularity. There are now at least nine TPM vendors operating at the multinational level in Europe, including one that has also set up operations in the U.S. These vendors are:

- Granada (DPCE, SMS, Mainstay)
- Sorbus
- Tekserv
- Econocom
- TPM Computer Services

- Telub
- Geveke
- Thyssen Field Service
- DTC Service

Merger and acquisition activity within the TPM marketplace is resulting in the development of a higher critical mass. This enables service suppliers, particularly TPM vendors, to present a more credible alternative and compete on more even terms with the major manufacturers.

C
Top 10 European TPM Vendors

Exhibit II-3 lists the top ten European TPM vendors, ranked by their 1987 revenues, calculated in U.S. dollars.

EXHIBIT II-3

TOP 10 EUROPEAN TPM VENDORS RANKED BY 1987 REVENUES

RANK	VENDOR	1987 REVENUES ($ Millions)	MARKET SHARE (Percent)
1	GRANADA*	54	6.2
2	DPCE	42.5	4.9
3	SORBUS	42	4.9
4	ECONOCOM	25	2.9
5	GEVEKE	20	2.3
6	IBIMAINT	19	2.2
7	TELUB	18.5	2.1
8	EXTEL	18	2.1
9	SPECTRAL	18	2.1
10	METROSERVICE	17	1.9

* Granada includes: CFM and SMS
(Total TPM Market in 1987: $865 M)

The year 1987 into early 1988 has been a period of considerable change in terms of the top ten independent TPM vendors in Europe.

- DPCE, Mainstay and CFM together with SMS have through acquisition by the Granada Group merged to form the largest independent TPM vendor in Europe.

- Bell Canada International's European service operations have been acquired by Bell Atlantic of the US. Bell Atlantic also owns the American TPM company Sorbus, and Bell Atlantic's European acquisition has provided an entry channel into Europe for Sorbus. Sorbus is now the world's largest TPM vendor.

- Olivetti has acquired two major TPM vendors in Italy (Ibimaint and Ciesse). These acquisitions have provided an entry point for Olivetti into the Italian TPM market. For the present, both these companies retain independence of operations from each other and from Olivetti.

D
Independent Maintenance Market Development

In 1987, the Western European independent maintenance market was heavily dominated by independent TPM vendors. The manufacturers' share of the independent maintenance market was at that time relatively insignificant. (See Exhibit II-4)

In early 1988, Olivetti successfully entered the TPM market in the U.K., achieving success through a contract valued at $55 million. Other equipment vendors were active in the TPM market prior to this, but with a significantly lower profile.

INPUT considers that activities during 1987 and 1988 have signalled the start of a major shift in the future structure of the independent maintenance market:

- More manufacturers will implement third-party services through a number of means, including acquisitions or partnerships.

- Manufacturers will achieve a 13% market share by 1993.

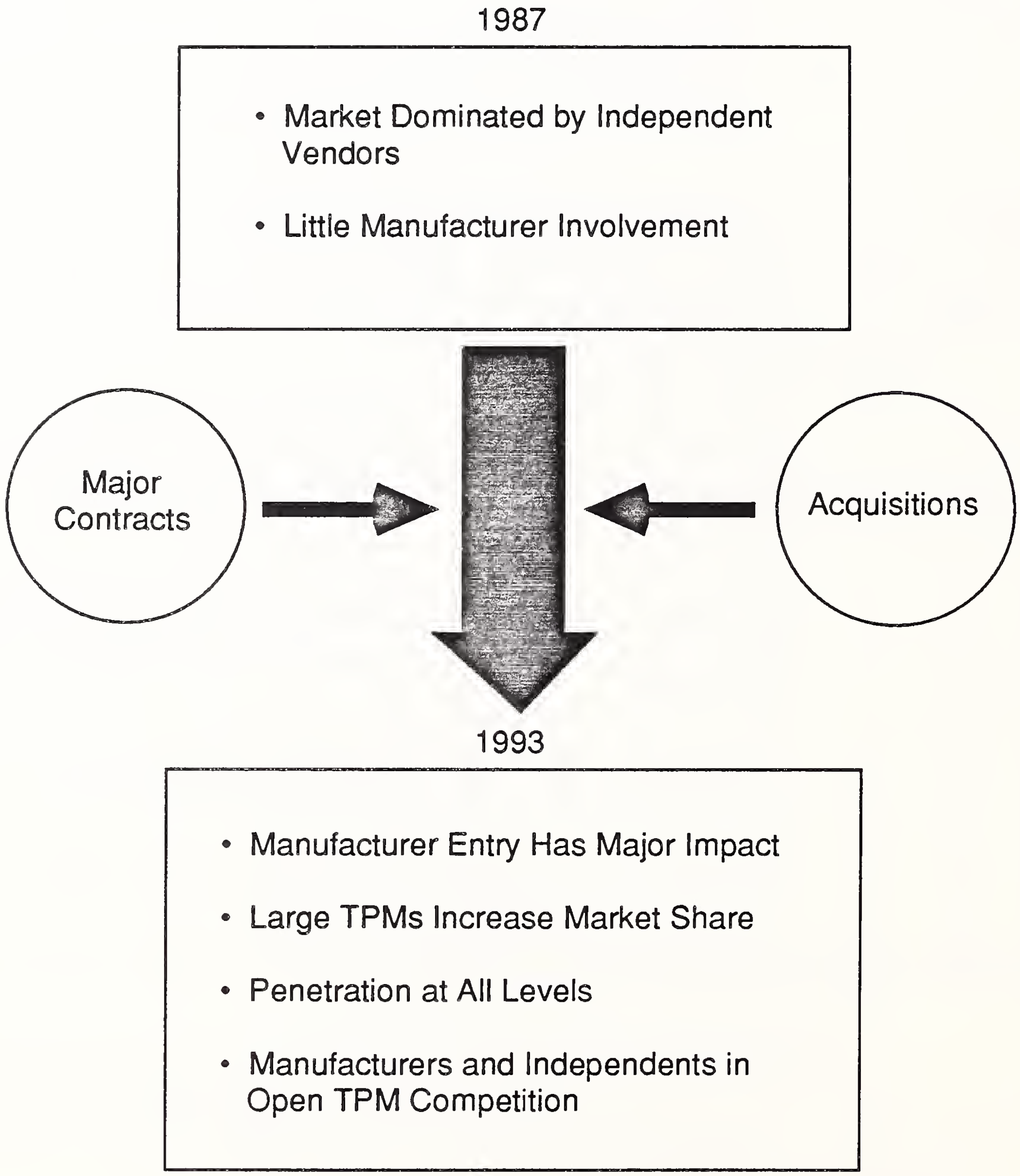
- The larger independent vendors will continue to expand and take greater market share.

- Increased market share by both manufacturers and the large independent vendors will be at the expense of the smaller independent companies. Increased penetration will be gained throughout all levels and across all sectors of the market.

- Smaller companies will be forced into specialisation in particular types of equipment or into searching for niche markets within industry sectors.

EXHIBIT II-4

INDEPENDENT MAINTENANCE MARKET STRUCTURE 1987-1993



E

TPM Selection Criteria

Exhibit II-5 indicates the most important reasons given by users for choosing or not choosing the third-party maintenance option.

The exhibit indicates that a very high percentage of TPM users (70%) selected it because of cost. INPUT considers that most TPM successes are achieved in a small sector of the market that is price sensitive.

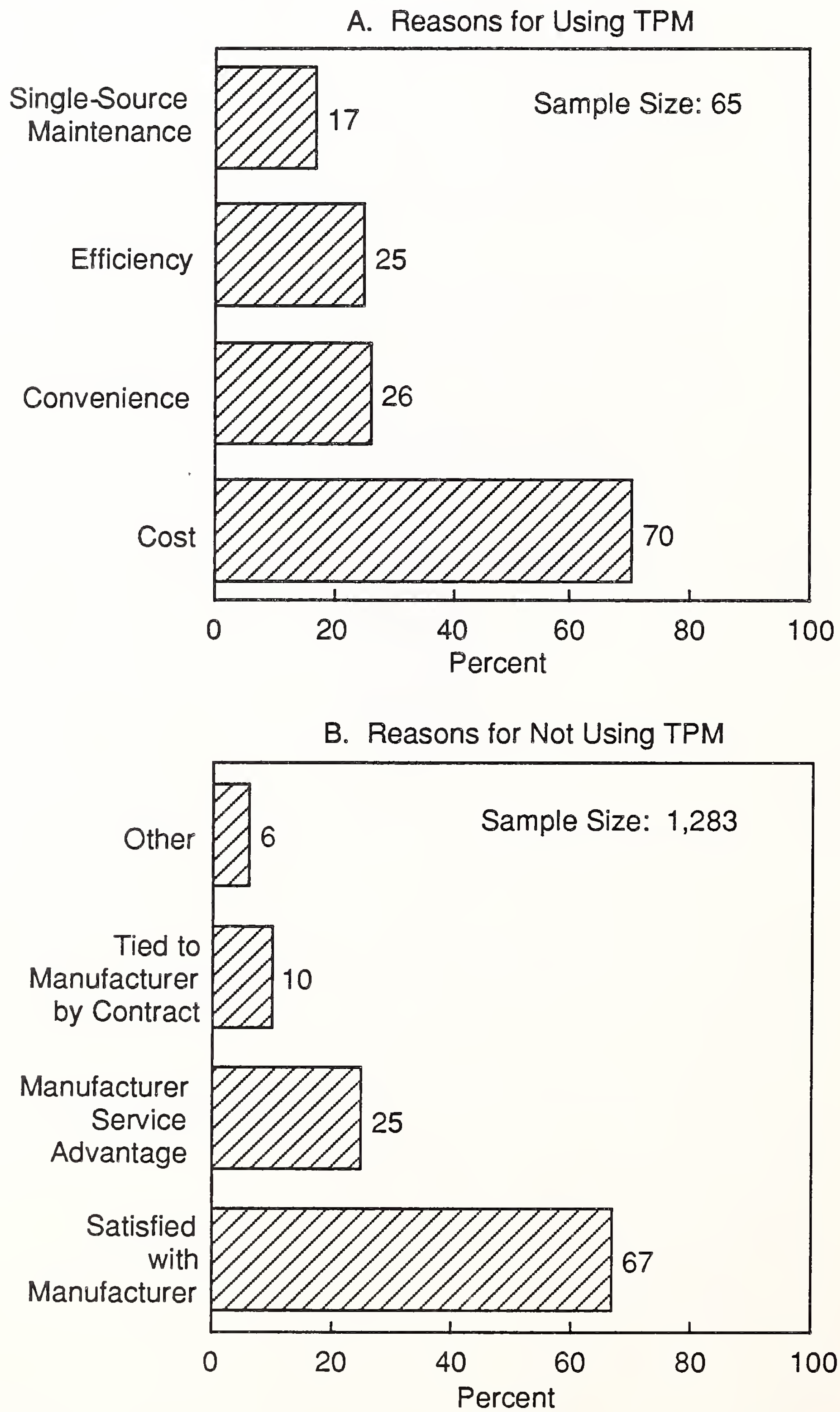
Around one quarter of users appear to choose TPM based on the perception that it offers either a more convenient or a more efficient source of service.

In contrast, 67% of non TPM users do not choose it because they are satisfied with the service they receive from their equipment manufacturer.

Smaller percentages of users either believe that the manufacturer has a service advantage or are contractually tied to the manufacturer. A very small percentage of users today (6%) appear to be unaware of TPM.

EXHIBIT II-5

TPM SELECTION CRITERIA



F
Market Challenges and Opportunities

Exhibit II-6 summarises the challenges and opportunities for European TPM vendors. Based on INPUT field research approximately 20% of the European customer services market is price sensitive. This percentage is one indication of the potential market share that can be achieved by independent maintenance. This price-sensitive segment of the market presents a clear opportunity to TPM vendors.

Software service is the highest growth sector of the customer services market and one in which the equipment manufacturers already have a substantial presence. Acquisition of software support capability represents an opportunity and a challenge to independent maintenance vendors:

- Success in this area will enable independent maintenance vendors to offer true single-source service. INPUT believes that the key to success in this area is dependent upon either partnership agreements with manufacturers or the acquisition of companies already rich in software skills.

- The challenge facing independent vendors is matching and maintaining parity with the manufacturers.

INPUT recommends that TPM vendors identify and develop strategies to service sectors of the market by focusing on specific niche markets, for example specialisation within a well-defined industry sector.

EXHIBIT II-6

INDEPENDENT MAINTENANCE MARKET CHALLENGES AND OPPORTUNITIES

- 20% Potential Service Market Share
- Software Support
- Market Opportunities
  - Niche Marketing
  - Industry Specialisation

III

The European Independent Maintenance Marketplace

III

The European Independent Maintenance Marketplace

A European Independent Maintenance Market Evolution

Third-Party Maintenance (TPM) has gained increasing popularity in Europe over the last two decades. Today, the concept of TPM is well established in all European countries, although the degree of user acceptance of TPM, and consequently the market penetration, varies in each country.

The growth and expansion of TPM in Europe has been led primarily by user demand for customer services that can offer:

- Flexibility
- Choice
- Cost savings

Based on these factors, TPM vendors have not only offered users an alternative source of maintenance, but they have also met the criteria of providing these services at more attractive prices than the equipment vendors as well as tailoring their services more precisely to the user needs.

Over the last few years, a number of factors have emerged that have tended to erode the traditional relationships that have existed between computer system users and the vendors of the equipment:

- The penetration of computers into all aspects of commercial/industrial and administrative activity, which has led to:
  - Increased reliance by these organisations on their computer systems

- The involvement of general management, as opposed to technical computer management, as significant decision makers for computer systems

- The changing mix and profile of types of computer systems, driven by technological development and the convergence of computers and communications equipment, has created important changes in the structure of the computer market:

  - The rapid growth of minicomputers and departmental systems.

  - A 'static' mainframe market and the further penetration of plug-compatible manufacturers (PCMs).

  - Recently, the even more rapid growth of the market for workstations (from such vendors as Sun, Apollo, Hewlett-Packard and Digital), personal computers and networking. The changes in the distribution channels for these types of equipment have weakened the manufacturers' control of the customer base.

All of these factors have greatly influenced the rapid development of multivendor sites, which have become the prime target for independent maintenance vendors.

TPM vendors have seized upon the opportunities presented to them by providing single-source maintenance. Additionally, it is observed that users' needs for service have increased considerably as dependence on their equipment has grown. This has led to a realisation of 'service' as a key item that can be delivered by someone other than the equipment supplier.

Another important factor that has led to the acceleration of the demand for service, is the blurring of the distinction between different types of products. Today, the linking and 'integration' of all types of systems and products has created a rich opportunity for vendors providing service and maintaining a wide range of equipment.

All of these factors have contributed to the increasing popularity of TPM, and vendors have started to respond to the market demand by supplying a wide range of services for a broad array of products.

European TPM vendors have, however, had to overcome a number of difficulties in their attempts to offer services that would at least be equivalent to the services offered by manufacturers.

One such difficulty concerns the attitude of manufacturers to the competition that has been established with the existence of TPM. It is a well-accepted fact that the continuing improvement and enhancement of new technology has led to a sharp decrease in hardware prices. At the same time, equipment reliability has been increased, reducing the relative "need" for maintenance.

Manufacturers have also been under increasing financial pressure arising from:

- User needs for multivendor installations have greatly reduced the automatic response by users to purchase equipment from the same vendor.

- The cost of human resources and spares have increased, whilst profit margins have been decreased.

The subsequent pressure put on manufacturers has been that of running their service organisation as a profit centre, at a time when margins have been decreasing.

The reaction of manufacturers to TPM vendors has thus been one of limited or, in some cases, non cooperation. The most widely quoted difficulty that TPM vendors have had with manufacturers has been that of obtaining spare parts and technical documentation from them.

TPM vendors in Europe have faced some difficulties unrelated to their competitive position with the manufacturers. These are for example problems with trade unions and, in France, government legislation.

Trade Unions - In some European countries, trade union organisations' regulations over work practices have meant that few companies are able to afford the overtime and/or extra shift coverage payments. Smaller TPMs are the ones that are particularly affected by these regulations, whereas larger manufacturers are in a better financial position to cope with such situations. Italy, for example, is a country where vendors have faced the highest degree of trade-union control.

Government Legislation in France - In France, vendors are forced by legislation to allow government departments to pay for all services in arrears, as opposed to the industry standard requirement of advance payment for maintenance contracts. This legislation seriously affects the cash flow position of vendors who have targeted the government market because of its attractiveness as a large and potentially lucrative sector. However, it is clear that if a company does not have strong financial backing, it is operating under a very severe business disadvantage in this sector.

INPUT believes that as the service market develops further, towards the creation of a 'single' market in Europe, TPMs and manufacturers will enter stiffer competition to retain and expand their market shares. Successful companies will be those that are able to market their services at levels meeting with user requirements and demand.

B
Market Opportunities

TPM vendors initially provided hardware maintenance services only. The growing importance of software, the move toward 'system integration', as well as the increasing user dependence on information technology, has drawn TPM vendors into adding a new dimension of service, namely software support.

As the market has developed and new user needs have emerged, TPMs have recognised the advantages of providing a total service solution, thus expanding the scope of their activities. Consulting, installation and planning are examples of areas in which TPMs have diversified and which are today considered as standard service offerings for most TPM vendors.

Increasing user expenditure in information technology has created new challenges and opportunities to service providers, and INPUT believes that in order to remain successful and increase their profitability, TPMs should now seriously consider extending their service 'packages' to offer an even wider portfolio of services.

One area into which TPM vendors have so far not been very active is the provision of software services. Although it is widely accepted that few, if any, TPMs are in a position to offer operating system software support on large equipment, due to lack of manufacturer cooperation, TPMs can and should take full advantage of offering training and consulting services on application software packages if this in appropriate to their organisation and their capabilities.

The high premiums that can be gained from software support is one of the main attractions of this activity. The challenge that TPM vendors are faced with in this domain is that of acquiring the necessary skills.

Opportunities also exist for TPM vendors to engage in other services—namely, consulting, planning, cabling, education/training and system installation/de-installation. These are services that most European TPMs are currently offering, but as yet they represent a small percentage of TPMs' total revenues.

C
Quality Standards

One of the most important aspects of service both from the vendor and the user point of view has been the quality of service. A large number of TPM vendors have succeeded in allaying user fears with regards to the quality of service that they offer, reinforced by increasing user acceptance of TPM.

In today's environment, vendors themselves have increasingly recognised the need for service quality by establishing new industry standards, and this has added a new dimension to service.

Over the past two years, the Association of Field Service Managers (AFSM) in close collaboration with the British Standards Institute (BSI) and the International Standards Organisation (ISO) has introduced a new standard under which companies' maintenance activities can be officially recognised for the quality of their service. This standard (the general industry standards under which maintenance services fall) that has been introduced, under the BS 5750 or ISO 9000 'good manufacturing practice' guidelines, and represents an area of opportunity and challenge for all TPM vendors.

The opportunity represented by this standard concerns mostly large TPMs, because it provides them with an effective and strategic marketing tool. However, the costs associated with registration for this standard can be high and should not be overlooked. One major TPM vendor, for example, quoted the cost of registration for BS 5750 at over $500,000.

The major advantage for TPMs is that ISO 9000 registration legitimises the business of a TPM as a service company that has had to meet rigorous standards. The fact that there are TPMs that have obtained the BS 5750 registration, namely Sorbus (U.K.) and Quest Computer Services, enhances the image of TPM and makes TPM a viable service alternative.

Smaller TPM firms, on the other hand, whilst they could potentially enjoy the same benefits as the large TPMs as far as the advantages of this standard are concerned, have to take certain factors into account. One of these is cost and the evaluation of whether it is feasible for a small TPM to spend a large sum in order to successfully register. On the other hand, companies that do not register may be losing the competitive edge that they may currently have over companies that have registered.

As more TPMs and manufacturers obtain the ISO 9000 registration, the ones that have not done so may suffer the indirect inference that the absence of this 'official' approval represents lower service quality.

The effects of ISO 9000 have yet to be proven in the service market, and currently this new standard is better known by vendors in the U.K. As the number of registered companies increases and other European vendors become aware and adhere to this standard, much will be gained by registered companies, who will be using this as one of their strongest marketing tools.

D Competition

The majority of TPM vendors believe their main competitors are other TPM vendors. Few vendors appear to feel threatened by the entry of manufacturers into the independent maintenance market, noting that the increased competition is affirmation of the viability of TPM.

Overall, manufacturers' entry into independent maintenance has been prompted by the pressures exerted on hardware maintenance revenues and falling margins at a time when service organisations have had to act as profit centres within each company. For the past two to three years, manufacturers have increasingly introduced protectionist policies, such as the introduction of longer warranties, to deter the efforts of TPM vendors.

Over the past two years, however, as the concept of single-source maintenance has gained popularity amongst users, manufacturer involvement has steadily increased. Olivetti, Honeywell-Bull and NAS are three examples of manufacturers that have by now established a strategic policy of becoming more and more involved in the provision of independent maintenance services.

Of these, Olivetti has been the most aggressive. With the introduction of 'Oliservice' in 1987, Olivetti officially announced its strategy of maintaining multivendor sites. Under this new banner of service, Olivetti is

now in a position to offer users an all-encompassing service that ranges from planning and installation to consulting, training and maintenance.

The strategy adopted by Olivetti has been that of either expanding its current service facilities, as in the U.K., or acquiring established TPM companies, as, for example, with its takeover of two of the largest TPMs in Italy—Ibimaint and Ciesse.

Although Olivetti has been following a European-wide independent maintenance strategy, other manufacturers have tended to concentrate on specific country markets. Control Data, for example, has been gradually building up its activities in France, and Memorex in the Benelux countries. The services offered by these two manufacturers are, as with Olivetti, a full range of service, but they differ from Olivetti in two respects:

- They do not have a European-wide presence for independent maintenance.

- Their main target markets are the IBM and to a more limited extent the DEC user base.

Other manufacturers' involvement in the independent maintenance market has only been developing over the past year and is to date limited. INPUT believes that once these manufacturers also launch an aggressive marketing campaign announcing their new position, they will undoubtedly be a major force within the market and their strengths should by no means be underestimated by TPM vendors that are currently dismissing them as competitors.

A concept that is increasingly being adopted by manufacturers entering the TPM market is that of 'maintenance management'. Although this concept is not new and was in fact an innovation of TPMs themselves, it has been positively used by manufacturers that have promoted it with the aid of their financial and organisational backup. In this instance, manufacturers have recognised the difficulties associated with promising 'single-source maintenance', which for the majority of TPMs has in practice meant offering service on a limited range of equipment from a handful of manufacturers.

Another area where manufacturers have a competitive edge over TPM vendors is software support. Although manufacturers, like TPMs, have to overcome difficulties associated with software support namely the

differences in operating system software environments, their advantage lies in that they all have established software support capability and the cost of expanding their existing service to cover other software is low in comparison to the investments required by TPMs wishing to consider this aspect of service.

INPUT's survey results reveal that the users' principal reason for using TPM is that TPM prices are lower than the manufacturer prices. There is little doubt that manufacturers that are offering third-party services—i.e., maintaining other manufacturers' equipment—will also seek to offer service at an attractive price. In this case, TPM vendors tend to have the competitive edge since they are in a better position, with lower overheads and costs, to offer the lowest prices. The continuing pressure on margins that follows the fall in equipment prices, however, will make it impossible for TPMs to keep up the price war for very long.

Overall, INPUT believes that the increased involvement of manufacturers in independent maintenance will have the positive effect of making this a much more competitive marketplace where professionalism and the ability to meet user requirements will play a very important role in determining the winners and losers.

E Acquisitions

Over the past twelve months, both TPM companies and manufacturers have been heavily engaged in expanding their share of the TPM market by means of acquisitions.

The most notable acquisition on the manufacturer side was the acquisition of Italy's top two TPM companies, Ibimaint (which was already 65% owned by Olivetti last year) and Ciesse, by Olivetti. With these acquisitions, Olivetti has strengthened its foothold in the Italian service market, where it enjoys the advantages of being the most dynamic national organisation in the world of information technology.

On the TPM vendor side, the three important acquisitions were:

- The acquisition of Mainstay Computer Cover and DPCE by the Granada Group following Granada's earlier acquisitions of CFM and SMS.

- The acquisition of the Bell Canada group of maintenance organisations, namely Bell Technical Services, Eurotech (Italy and France) and Dataway, by the Bell Atlantic Group, now named Sorbus, by Bell Atlantic.

- The acquisition of the German TPM Bitronic Hardware Service by the Swedish company Telub.

Each of these acquisitions was significant since:

- The Granada Group now forms the largest single European group of European TPM companies.

- Sorbus, which has been the leading TPM company in the United States, now has a strong foothold in the European TPM marketplace.

- Telub, the largest Scandinavian TPM vendor, has expanded the scope of its activities across Europe into Germany, reinforcing the trend of the 'Europeanisation' of TPM firms.

Exhibit III-1 lists the acquisition activity in the independent maintenance market in the 1987-1988 timeframe. It includes activity from some smaller TPM vendors across Europe that have also been engaged in acquiring TPM firms in order to expand their services into other countries or extend their current national coverage.

EXHIBIT III-1

ACQUISITIONS OF THIRD-PARTY MAINTENANCE COMPANIES IN EUROPE, 1987 - 1988

ACQUIRER	ACQUIRED
Granada	DPCE Mainstay
Bell Atlantic	Bell Technical Services Eurotech - France Eurotech - Italy Dataway
Telub	Bitronic Hardware Services
SMS France	Infomat/Intersystem
Spectral Pharmtec Compucorp)	Maintenance arm of (subsidiary of U.S. company
Quest Support Services	Grist Business Services
Syscom	MLA
Sysmatic Arrow	Service arm of Dicoll and
Megabyte	Allegro Computer Services (ex Wotton Jeffries Plc)
Computer Engineering Services	Bridos Information Systems
Tekserv	Dial / Provence (France) SAIT Group (Belgium) Inmentic (Denmark)

IV

Independent Maintenance Market Analysis

IV

Independent Maintenance Market Analysis

This chapter contains INPUT's analysis of the European independent maintenance market. Section A provides an overall summary for Western Europe, and Sections B through H provide analyses of the individual country markets.

A
European Independent Maintenance Market Forecast

The forecasts are based on an assessment of the total independent maintenance market for 1987 and cover the five-year period 1988 -1993. These forecasts are an assessment of end-user expenditure on independent maintenance services.

The forecasts are made in local currency and converted into U.S. dollars for aggregation and comparative purposes. Additionally, the forecasts have been made in current rates and therefore include inflation. Independent maintenance pricing will not necessarily reflect the rate of inflation, but it will of course be an important factor.

Exhibit IV-1 shows the U.S. dollar conversion rates used for calculating a consolidated European total for the independent maintenance market and the inflation rate assumptions used by INPUT.

Exhibit IV-2 shows the overall analysis of the independent maintenance market in Europe. It can be seen that INPUT assesses the 1988 market for Europe as a whole at $1,155 million, reaching $2,360 million by 1993.

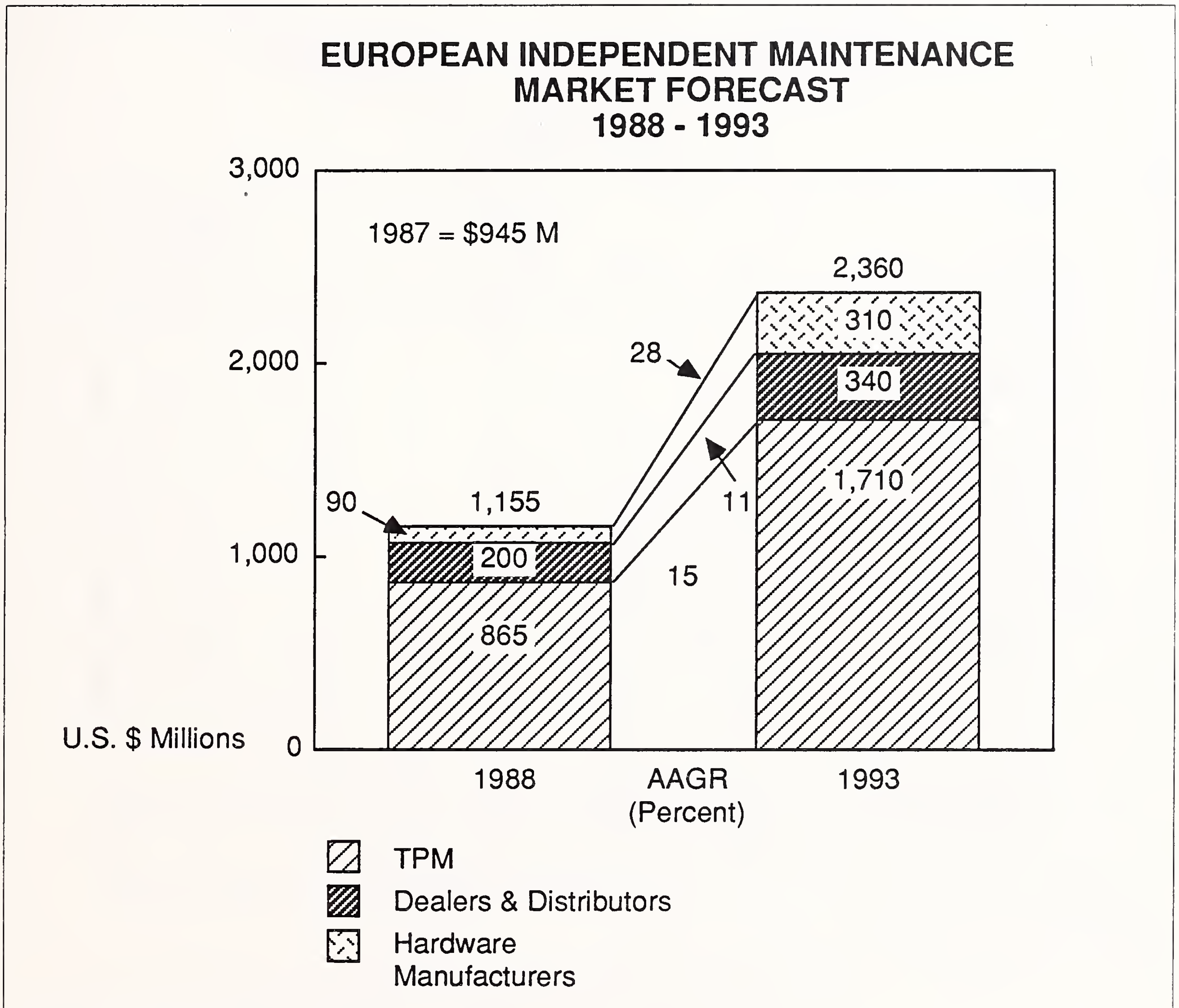
EXHIBIT IV-1

U.S. DOLLAR CONVERSION RATES AND INFLATION RATES BY COUNTRY

COUNTRY	CURRENCY	EXCHANGE RATE	INFLATION
Austria	AS	12.81	+2.0
Belgium	BF	38.10	+1.0
Denmark	DK	6.90	+5.0
Finland	FM	4.34	+5.5
France	FF	6.13	+2.6
Ireland	IR£	0.68	+2.5
Italy	LIRA	1351.00	+4.9
Netherlands	Dfl	2.05	+0.7
Norway	NK	6.66	+7.5
United Kingdom	£	0.59	+4.6
Spain	PTA	121.40	+4.3
Sweden	SK	6.29	+6.9
Switzerland	SF	1.51	+2.1
West Germany	DM	1.82	+1.0

Source: Swiss Bank Corporation
National Westminster Bank

EXHIBIT IV-2



Hardware equipment vendors' revenues derived from independent maintenance are expected to grow at an average annual rate of 28% in the five year period, whilst revenues generated by TPM vendors and dealers and distributors are forecast to grow at an average annual rate of 15% and 11% respectively.

Exhibit IV-3 shows the breakdown of the forecasts by country, and compares growth from 1987 to 1988 as well as the five-year forward growth to 1993.

EXHIBIT IV-3

EUROPEAN INDEPENDENT MAINTENANCE MARKET FORECAST BY COUNTRY 1988 - 1993 (U.S. $ Millions)

	1987	1988	Growth 87-88 (Percent)	1993	Growth 88-93 (Percent)
Austria	9	11	22	31	23
Belgium	26	30	15	73	19
France	147	180	22	382	16
Italy	81	98	21	192	14
Netherlands	69	82	18	178	17
Sweden	41	48	17	75	9
Spain	23	31	34	96	25
U.K.	339	436	28	907	16
W. Germany	135	155	15	283	13
Rest of Europe	75	84	12	143	11
TOTAL	945	1,155	22	2,360	15

The U.K. is the largest European market for independent maintenance, representing 36% of the total market in 1987. France and West Germany are the second and third largest markets respectively for independent maintenance in Europe.

B France

1. Market Forecast

As shown in Exhibit IV-4, INPUT estimates that in 1987 the total market for independent maintenance services reached FF 900 million. INPUT forecasts that by 1993 these will reach FF 2,340 million, representing an average annual growth rate of 17% over this five-year period.

EXHIBIT IV-4

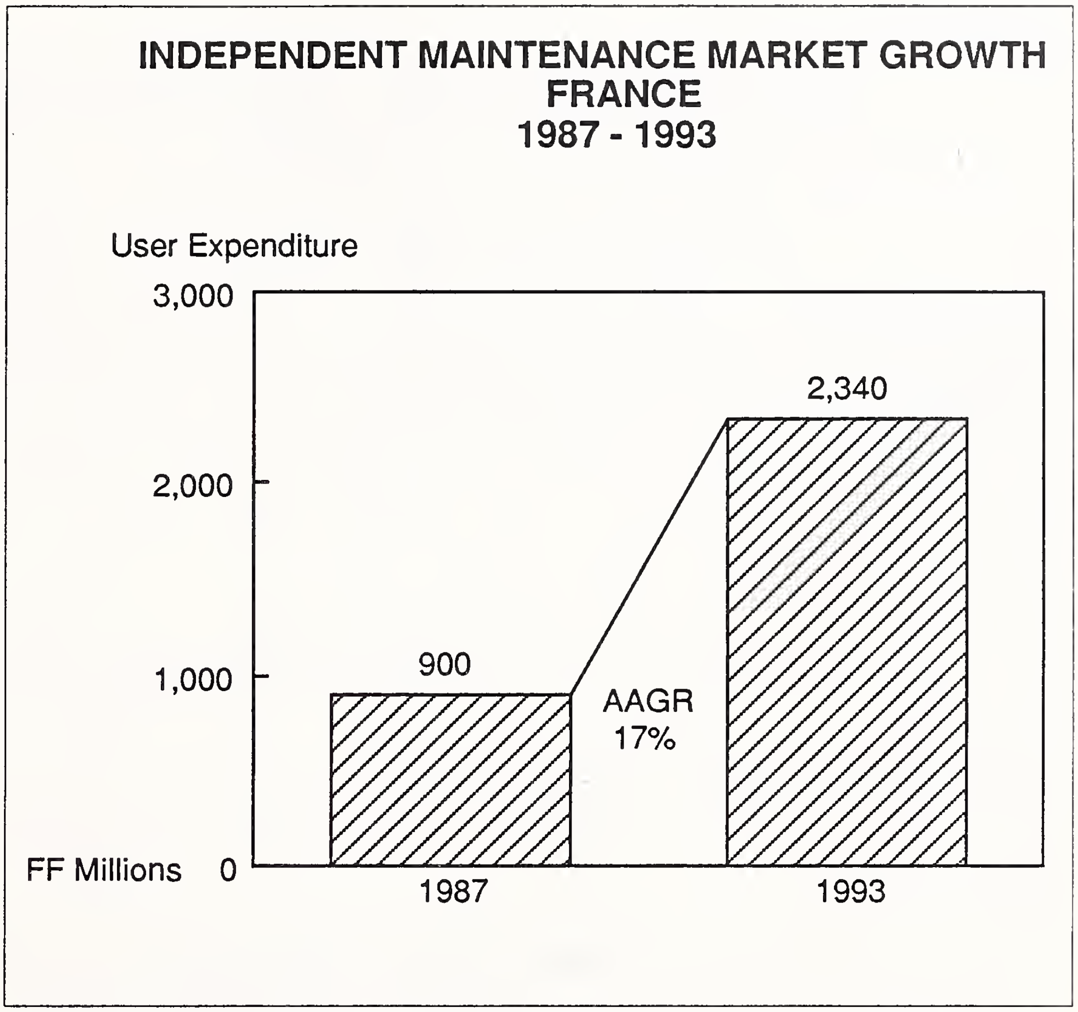


Exhibit IV-5 shows the detailed analysis of this forecast for the total market for independent services in France. Overall, the TPM vendors' total market share is expected to increase slightly from 78% in 1987 to 79% in 1993, whilst it is estimated that the hardware vendors' share will be increased from 6% to 10%. Increased competition from manufacturers and TPM vendors will affect the market share of dealers and distributors, which INPUT forecasts will be reduced from around 16% in 1987 to just over 10% by 1993.

Exhibit IV-6 shows the market forecast for the independent TPM company sector. From an estimated market size of FF 700 million in 1987, INPUT forecasts the market achieving a size of FF 1,850 million by 1993. This represents an annual average growth rate of 18%.

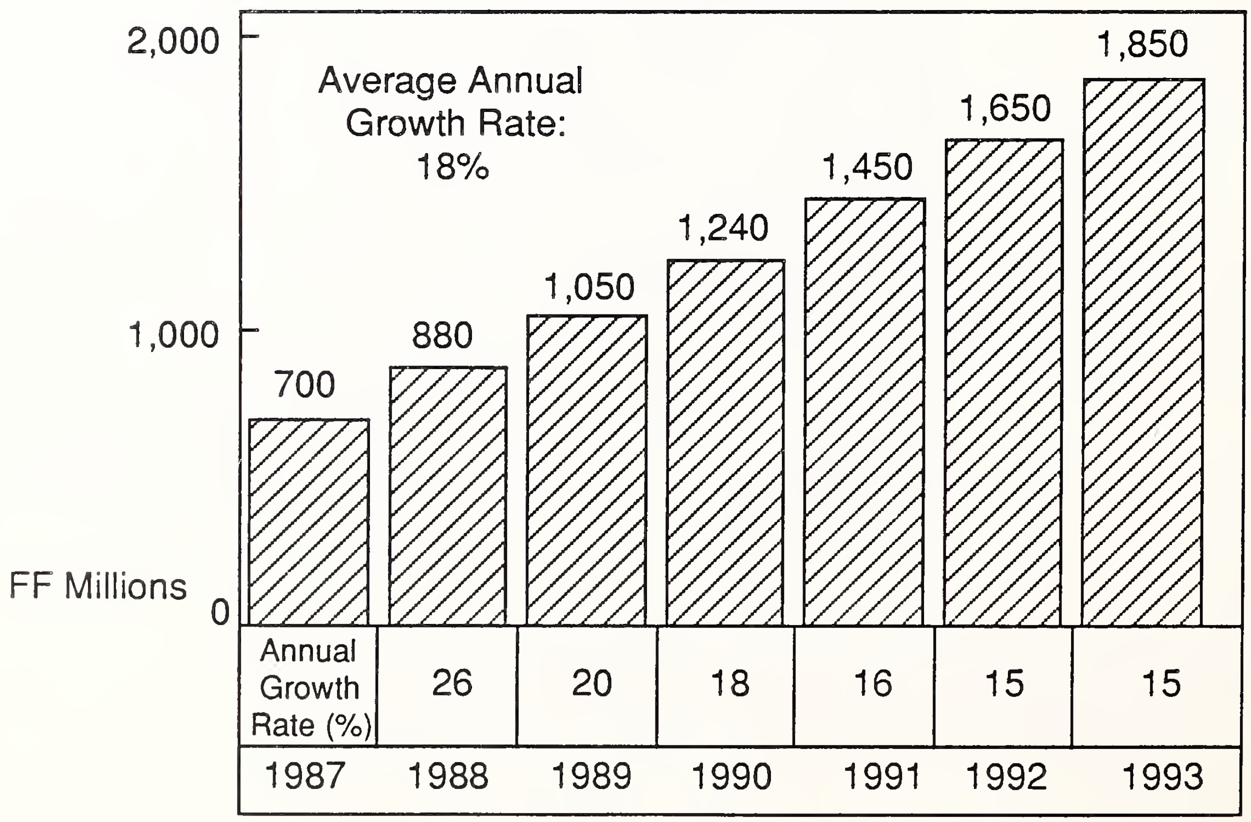
EXHIBIT IV-5

INDEPENDENT MAINTENANCE MARKET FORECAST FRANCE (FF Millions)

	1987	1988	1989	1990	1991	1992	1993	AAGR %
TPM Vendors	700	880	1,050	1,240	1,450	1,650	1,850	18
Dealers & Distributors	150	160	180	200	220	240	265	10
Hardware Manufacturers	50	60	70	100	130	170	225	28
TOTAL	900	1,100	1,300	1,540	1,800	2,060	2,340	17
Annual Growth %	N/A	22	18	18	17	16	14	N/A

EXHIBIT IV-6

TPM VENDOR MARKET GROWTH FRANCE



2. Market Characteristics

Independent maintenance has gained increasing market penetration in France, following an aggressive marketing campaign by TPM vendors that has resulted in increasing user awareness of TPM.

INPUT estimates that there are approximately thirty TPM companies in France in total, the majority of which are very small companies specialising in the maintenance of personal computers and peripheral equipment. Exhibit IV-7 lists the leading TPM vendors, ranked by 1987 revenues. The major TPMs in France are:

- AMTI
- ECS
- Econocom
- Metroservice
- MIS
- SMS
- Spectral
- Sorbus

Of these, SMS is the only vendor offering third-party services on a full range of equipment—i.e., from mainframes to peripherals. As with the other European TPM firms, French TPMs specialise in hardware-related services, which include installation, planning, consulting, etc., as well as the basic service of hardware. TPM vendors interviewed considered the telecommunications sector as representing new market opportunities, and are expected to increase their activities in this area.

3. Growth Factors

TPM is now well known by users in France, following the aggressive marketing of the French TPM vendors.

Vendors see the primary key to the success of TPM in their ability to offer a purely 'independent' service on a wide range of equipment. According to the vendor respondents, the ability of TPMs to offer single source maintenance, though important, does not rank as highly as the provision of a service that does not encompass sales of equipment.

EXHIBIT IV-7

LEADING TPM VENDORS IN FRANCE RANKED BY 1987 TPM REVENUE (FRENCH FRANC MILLIONS)

	1987 REVENUES	1988 FORECAST REVENUES	NO. OF ENGINEERS	NO. OF SERVICE CENTRES
SPECTRAL	110	140	250	45
METROSERVICE	105	135	150	20
SMS	93	165	280	26
MIS	75	110	200	38
CDC	70*	N/A	50	6+30 REPAIR
ECS	60*	N/A	120	15
AMTI	40	50	110	20
ECONOCOM	38	50	55	8
SORBUS	34	45	60	3

* INPUT Estimate

Other factors noted by the vendors as having contributed to the growth of their business are:

- Pricing of TPM, which is typically cheaper than the manufacturers'

- Speed of response to calls, given that there is only one point of contact

- Ease of administrative procedures within each company

- The ability of TPM to offer a more personalised service that is tailored to the customer's needs

Apart from marketing and advertising, TPM vendors have sought new ways of expanding their markets. One such way is to maintain the equipment of manufacturers that do not have a service organisation in France.

Spectral, for example, has followed this approach with two manufacturers with very positive results. Being the service representative of a manufacturer enhances the image of TPM and attracts the confidence of users.

Some comments by French TPM vendors on market growth factors are shown in Exhibit IV-8.

EXHIBIT IV-8

FRENCH VENDOR COMMENTS ON GROWTH FACTORS

'TPM has grown because it offers and INDEPENDENT service.'

'Our service is personalised and tailored to the customers' needs.'

'TPM has grown rapidly because it offers good quality service at an attractive price.'

4. Market Inhibitors

Amongst the vendors interviewed, all were optimistic about the TPM market and its growth potential in France. The vendors reflected the viewpoint that TPM is a concept that is familiar to the more sophisticated user, but that more work needs to be done in promoting TPM in regions with fewer and smaller installations.

According to the French TPM vendors, a certain element of user mistrust of TPM still remains in France but is one that is changing with the professionalism of the vendors. The emergence of new companies and growth of the existing ones is in itself proof of the success that TPM is having in France.

Vendors did not consider issues such as the longer warranties offered by manufacturers as representing a threat to their business because, as one vendor commented 'there are always restrictions attached to these warranties and customers want to have the peace of mind of obtaining fast, reliable and on-site service at all times'.

5. Competitive Environment

As in other European countries, French TPMs tend to underestimate the threat that may be caused by the involvement of manufacturers in TPM. So far, Olivetti and Control Data are the only manufacturers with any significant established presence in the French TPM marketplace, al-

though Bull is also taking a keen interest in this sector with the creation of a third-party services division.

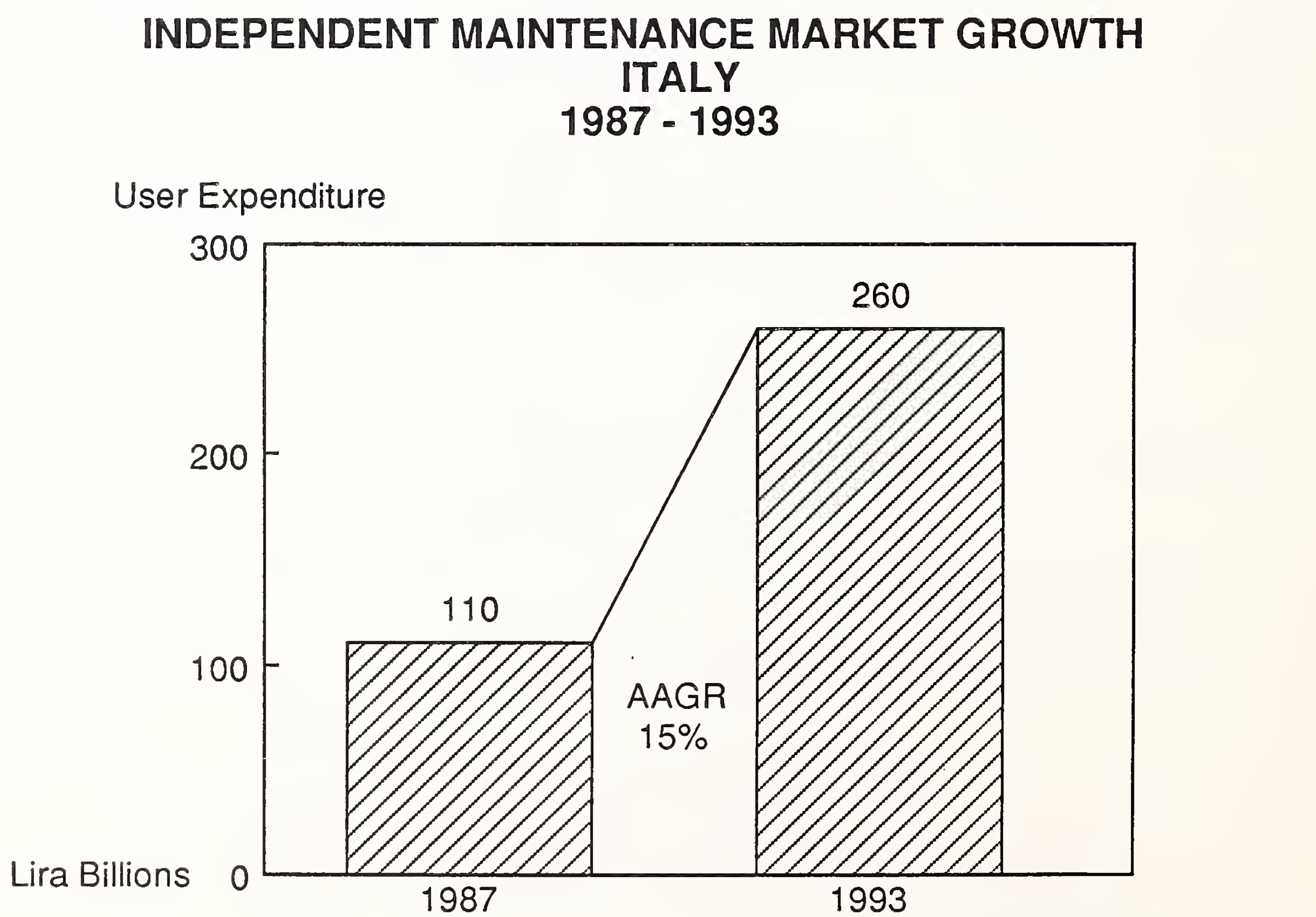
The bulk of the competition is coming from TPM vendors. The full impact of the acquisitions of SMS by the Granada Group and Eurotech Services (now named Sorbus France) by the Bell Atlantic Group remains to be seen, but INPUT expects that the European and international strength of these companies will favour their continued growth. As far as the French market is concerned, however, there may still be a general tendency by users to turn to companies that are purely French rather than 'foreign' owned.

C Italy

1. Market Forecast

INPUT forecasts that the Italian Independent Maintenance market will grow at an average annual rate of 15% over the 1987 - 1993 period with revenues totalling Lira 110 billion in 1987 and reaching Lira 260 billion in 1993, as shown in Exhibit IV-9.

EXHIBIT IV-9



The TPM vendor market share at Lira 75 billion represents 70% of the total market, and the dealers and distributors' share of Lira 35 billion represents 32% of the total market. It is estimated that the aggregate TPM and dealers and distributors markets will reach Lira 260 billion by 1993, growing at an average annual rate of 15%, as shown in Exhibits IV-10 and IV-11.

EXHIBIT IV-10

INDEPENDENT MAINTENANCE MARKET FORECAST ITALY
(Lira Billions)

	1987	1988	1989	1990	1991	1992	1993	AAGR %
TPM Vendors	75	90	105	115	135	150	170	15
Dealers & Distributors	35	40	45	50	57	65	70	15
Hardware Manufacturers	—	2	3	5	8	13	20	60
TOTAL	110	132	153	170	200	228	260	15
Annual Growth %	N/A	18	15	13	15	15	13	N/A

INPUT believes that, apart from Olivetti, manufacturers are not currently playing a significant role in the Italian market for independent maintenance, a situation that is unlikely to change dramatically over the next five years.

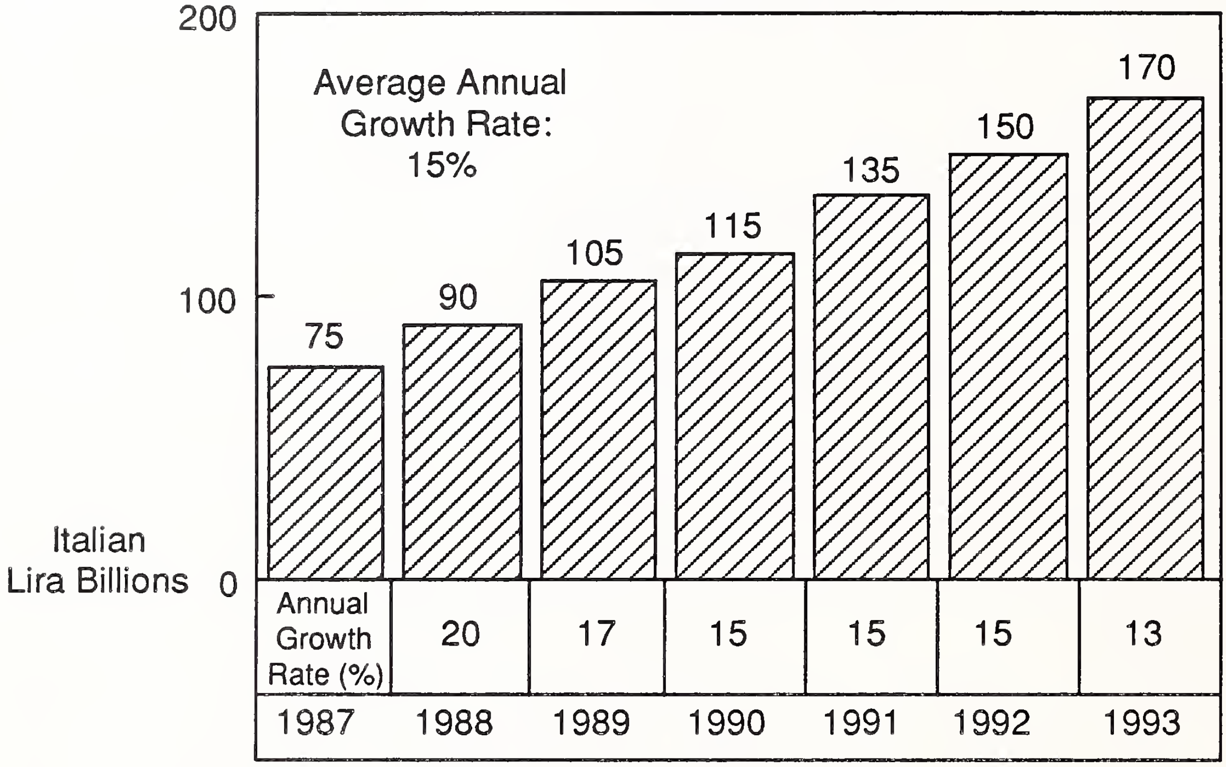
2. Market Characteristics

Service in Italy is still generally provided by equipment manufacturers. In total, INPUT has assessed that there are only ten TPM vendors in Italy. Exhibit IV-12 lists the leading Italian TPM vendors, ranked by 1987 revenues.

It is interesting to note that at the high end of the equipment scale, all the major Italian TPM vendors maintain equipment from IBM. As for the lower ranges of equipment—i.e., personal computers, printers, worksta-

EXHIBIT IV-11

TPM VENDOR MARKET GROWTH ITALY



tions, etc.—all vendors support equipment from major manufacturers.

With the expansion of the Italian TPM market, TPM vendors have begun offering services other than pure hardware maintenance. Installation is one such activity that is now being provided by all vendors. Other services include site preparation, cabling, education, training, planning and consultancy. One company, Ciesse, is now offering disaster recovery services as well.

3. Growth Factors

Italian TPM vendors believe that user demand for single-source maintenance and the availability of an alternative to the manufacturer have been the principal driving forces of TPM in Italy.

Vendors noted that pricing used to play a very important role in persuading users to seek an alternative to manufacturer-supplied customer service. As the market has grown, however, and with changing user requirements, the convenience of the TPM 'one stop shopping' offered to users is now the users' principal reason for choosing TPM.

EXHIBIT IV-12

LEADING TPM VENDORS IN ITALY RANKED BY 1987 TPM REVENUES ITALIAN LIRA BILLIONS

	1987 REVENUES	1988 FORECAST REVENUES	NO. OF ENGINEERS	NO. OF SERVICE CENTRES
IBIMAINT	27	40	220	25
CIESSE	18	20	80	26
ECONOCOM	5	6.5	32	5
SORBUS	6	7	45	11
RESTORE	43*	N/A	20	2

*INPUT Estimate

The acquisition of the two largest Italian TPMs, Ibimaint and Ciesse, by Olivetti has boosted the image of TPM as representing a 'professional' alternative to manufacturer service. Being part of one of Italy's most prestigious companies gives users more confidence in knowing, as one vendor commented, that 'they are not jumping into a black hole'.

Vendors also believe that more users are choosing TPM because it offers them a more flexible service tailored to each user's needs. Another element seen by vendors as having promoted the growth of TPM is that TPM vendors provide a more personal service whereby engineers are in close contact with the users. Exhibit IV-13 shows some comments on growth factors made by Italian vendors.

4. Market Inhibitors

Given that TPM has grown very rapidly in Italy, vendors remain optimistic about continued growth in the future. Competition amongst TPMs is limited to a small number of vendors, and these do not feel threatened by each other.

EXHIBIT IV-13

ITALIAN VENDOR COMMENTS ON GROWTH FACTORS

'Customers like to have one service organisation looking after all their service requirements.'

'We see growing demand for single-source maintenance and so far we have competed with the manufacturers on price.'

'Quality of service and the TPM ability to offer a personalised service are the most important factors that have promoted the growth of TPM.'

Vendors did nonetheless consider some elements as restricting their activities. Some vendors comments on this issue can be seen in Exhibit IV-14. These included the longer warranties offered by manufacturers and the manufacturers' reluctance in readily providing TPMs with spare parts.

EXHIBIT IV-14

ITALIAN VENDOR COMMENTS ON FACTORS INHIBITING GROWTH

'TPM is a growing market in Italy, and we do not think there are any factors inhibiting its growth.'

'As far as we are concerned, the only inhibiting factor is manufacturers offering longer warranties.'

One respondent felt that he was losing potential customers and revenues by advertising. Although advertising is a traditional marketing tool, this respondent felt that his advertisements also represented 'free' advertising for other TPMs.

Another vendor noted that his company was having some difficulties in convincing its engineers to work long and/or week-end shifts in order to provide round-the-clock service. Unions are still very strong in Italy, and unless a company's management abides by the strict regulations of

the unions, it can be faced with problems, such as strikes, that can be very damaging. This respondent noted, for example, that if he wanted to offer support at night or at the week-end, his own costs would be so high that he would not be able to offer his client a price that would be acceptable.

5. Competitive Environment

Italian TPM vendors regard other TPMs as their main competitors. Apart from Olivetti, there is no other competition from manufacturers in the Italian TPM market. Olivetti's strategy is clearly that of having a strong position in this market, and it has taken steps in this direction with the acquisition of the two largest TPM companies in Italy—Ibimaint and Ciesse.

Although concerned about the increasing involvement of Olivetti in TPM, vendors do not feel threatened by the potential penetration of other manufacturers in this market. INPUT anticipates that more players will be attracted by the growth potential of TPM in Italy over the next two years, which will increase competition amongst TPM vendors.

D The Netherlands

1. Market Forecast

INPUT forecasts that Independent Maintenance revenues in the Netherlands will grow at an average annual rate of 16% from Dfl 142 million in 1987 to Dfl 365 million in 1993, as shown in Exhibit IV-15.

There is at present no evidence of manufacturer activity in the Dutch independent maintenance market. INPUT estimates that in 1987 the TPM market in the Netherlands totalled Dfl 130 million and revenues derived by dealers and distribtors totalled Dfl 12 million. As shown in Exhibits IV-16 and IV-17, INPUT forecasts that by 1993, the total independent maintenance market will be valued at Dfl 365 million.

2. Market Characteristics

Over the past few years, third-party maintenance has been growing quite rapidly in Holland, mainly because of the very high concentration of installations from a wide range of manufacturers. This factor, as in other European countries, has created the demand within the service market for alternative sources of service.

EXHIBIT IV-15

INDEPENDENT MAINTENANCE MARKET GROWTH NETHERLANDS 1987 - 1993

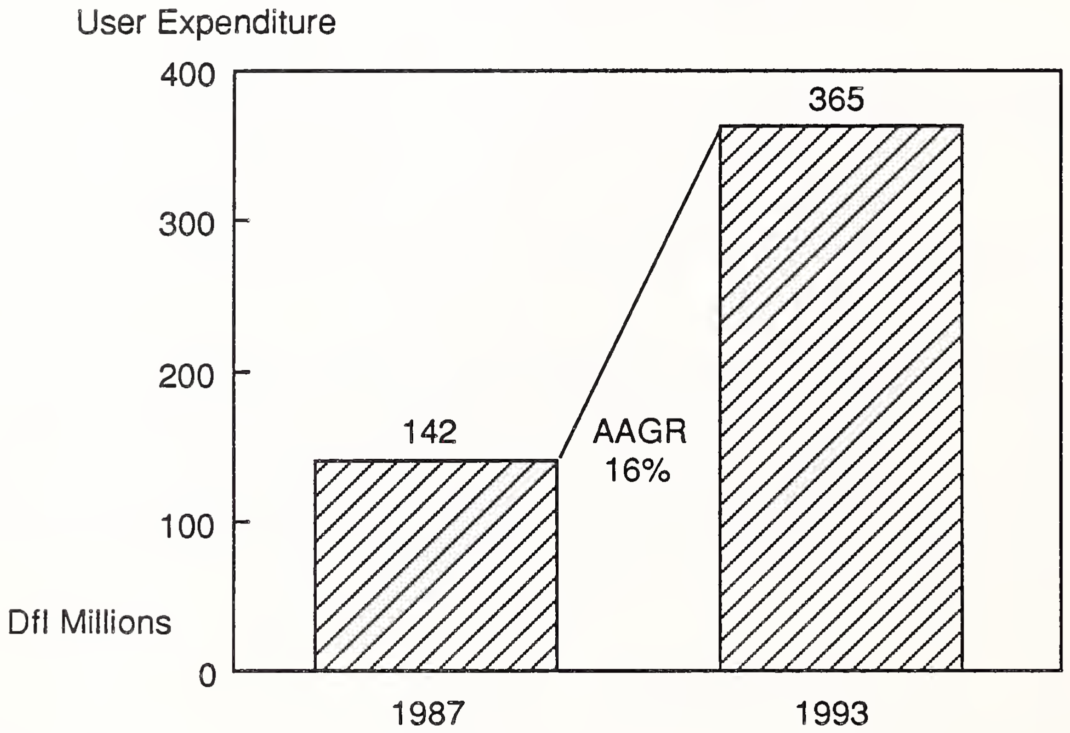


EXHIBIT IV-16

INDEPENDENT MAINTENANCE MARKET FORECAST NETHERLANDS
(Dfl Millions)

	1987	1988	1989	1990	1991	1992	1993	AAGR %
TPM Vendors	130	155	185	220	255	292	320	16
Dealers & Distributors	12	13	17	19	22	25	25	13
Hardware Manufacturers	—	—	2	3	6	11	20	78
TOTAL	142	168	202	240	280	325	365	16
Annual Growth %	N/A	18	19	18	16	16	11	N/A

EXHIBIT IV-17

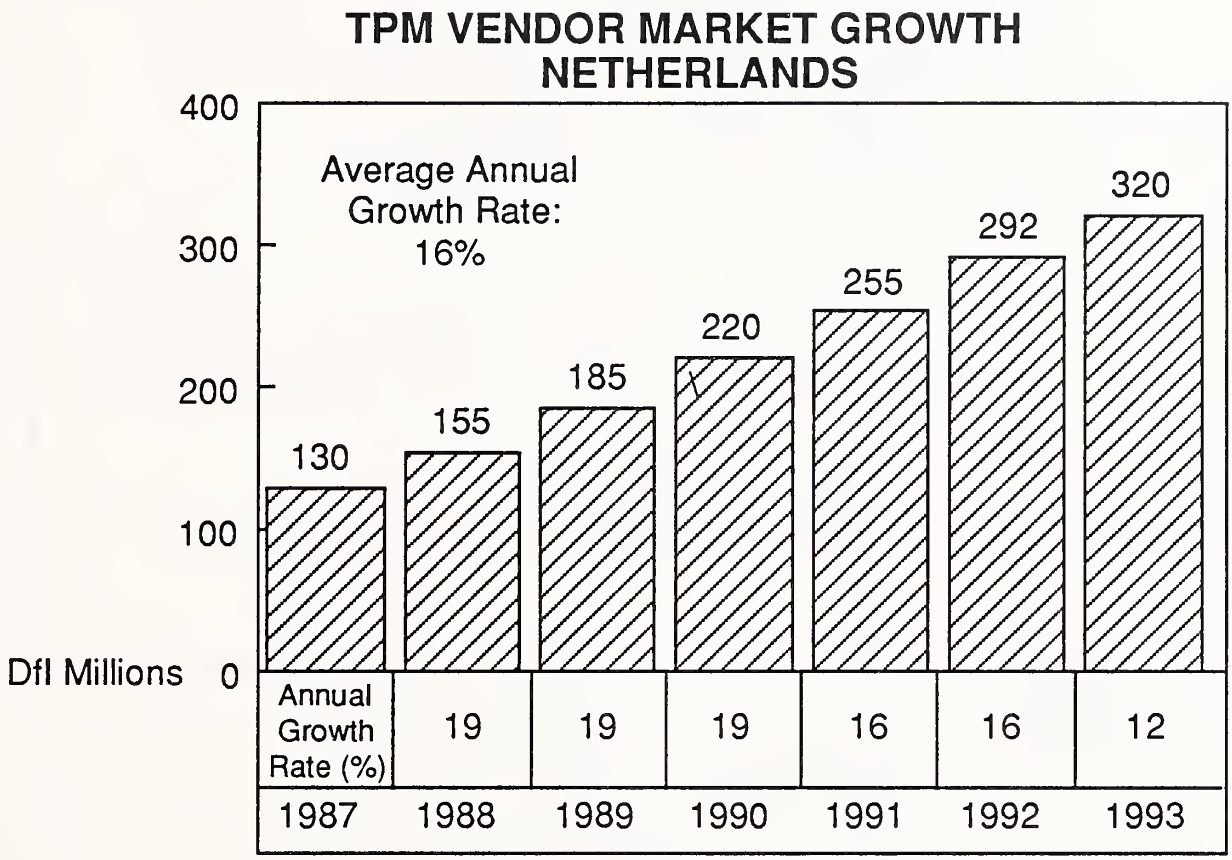


Exhibit IV-18 lists the leading Dutch TPM vendors, ranked by 1987 revenues. There are approximately twenty players in the Dutch TPM market, the three largest being Geveke Electronics, DTC Service and DPCE.

Service vendors in the Netherlands benefit from the compact geographical nature of the country which allows fast and easy travel. Furthermore, the presence of a large number of multinational firms provides an ideal environment for the offering of single source maintenance.

TPM vendors in the Netherlands offer maintenance mainly on DEC and IBM equipment for their minicomputer ranges and all the major manufacturers for personal computers and peripheral equipment. So far, none of the companies have entered the mainframe maintenance market, given the difficulties associated with obtaining spare parts and the fact that TPMs are still unable to offer a full range of software support services.

All the respondents offer a wide range of services that include: installation, site planning, systems upgrades, system testing and consulting.

EXHIBIT IV-18

LEADING TPM VENDORS IN NETHERLANDS RANKED BY 1987 REVENUES DUTCH GUILDERS MILLIONS

	1987 REVENUES	1988 FORECAST REVENUES	NO. OF ENGINEERS	NO. OF SERVICE CENTRES
GEVEKE	36	40	220	6
DTC	30*	N/A	33	1
DPCE	15*	N/A	80	1
BSI	6.5	10	65	1
CIS	2.5	3	16	4

*INPUT Estimates

3. Growth Factors

The Dutch TPM firms interviewed by INPUT strongly believe that TPM is a concept that the Dutch users have now become familiar with and are therefore more willing to consider.

Vendors also felt that TPMs have two main advantages over the manufacturers:

- TPM service is more flexible.
- TPM service is more personal.

Single-source maintenance was also thought to be an important asset for TPMs, particularly for large companies with a wide range of equipment from different manufacturers. Examples of Dutch vendor comments are given in Exhibit IV-19.

Vendors also noted that quality of service was an important and essential element of the service that they offer. All respondents were confident about their organisation's high-quality standards reinforced by the growth that each one has been able to achieve.

EXHIBIT IV-19

DUTCH VENDOR COMMENTS ON GROWTH FACTORS

'There are increasing numbers of mixed installations in Holland and users are more aware and open to TPM, which provides a one-stop shopping facility.'

'TPM vendors now offer a wide range of services and are more flexible than manufacturers.'

Dutch TPM vendors also believe that their market is one that still requires competitive pricing to attract new users. User demand for lower prices can still be met by TPMs, given the lower overhead expenditure of these companies.

One of the Dutch vendors attributed the growth of TPM in the Netherlands to the ability of TPMs to match manufacturers' quality of service at a lower price and in a more flexible and personalised manner.

4. Market Inhibitors

Although the Dutch TPM market has been growing steadily, vendors still detect a certain 'psychological' resistance on the part of users. This is an obstacle that vendors believe they can overcome with a strong marketing campaign.

One of the respondents noted that there are, however, certain factors that are hindering the growth of TPM and that are beyond the control of the TPM firms themselves. One such factor is increasing equipment reliability and the fall in the price of hardware. As machines become more and more reliable, justifying the need for maintenance becomes a more difficult task. Manufacturers are able to disguise the price of maintenance in a number of ways, the most popular of which is increasing warranty periods. As the respondent noted, 'nothing is given away free of charge' by the manufacturers, and if the period of warranty is longer at 'no extra charge', this means that manufacturers have allowed for it in the price of the equipment. Some TPM vendor comments are incuded in Exhibit IV-20.

EXHIBIT IV-20

DUTCH VENDOR COMMENTS ON FACTORS INHIBITING GROWTH

'There is still some psychological resistance to TPM.'

'Manufacturers make users believe that they are giving free service by offering longer warranties or bundling service.'

'Our prices have always been competitive, but if manufacturers keep on lowering hardware prices, our margins will be reduced and we may not be able to offer such competitive prices.'

Secondly, the price of hardware has been steadily falling over the past three years. If this decline continues, TPMs will find it exceedingly difficult to retain their margins and compete with manufacturers' maintenance prices.

A third factor is the technological changes that are rendering hardware increasingly sophisticated. At the high end of the market, these advances mean that it will be even more difficult for TPMs that are not already doing so to move into the mainframe maintenance market.

5. Competitive Environment

To date, manufacturers' involvement in the Dutch independent maintenance market has remained limited. The TPM vendors contacted by INPUT did expect increased manufacturer involvement but are as yet unperturbed by the idea.

According to the respondents, manufacturers are only looking at the TPM market in a defensive manner. Well established Dutch TPMs, do not feel threatened by the possible invasion of their market by manufacturers.

Dutch TPM firms remain optimistic about the future of their business, particularly as they also see the advantages of their proximity to Belgium, with which the Dutch have a long history of trading.

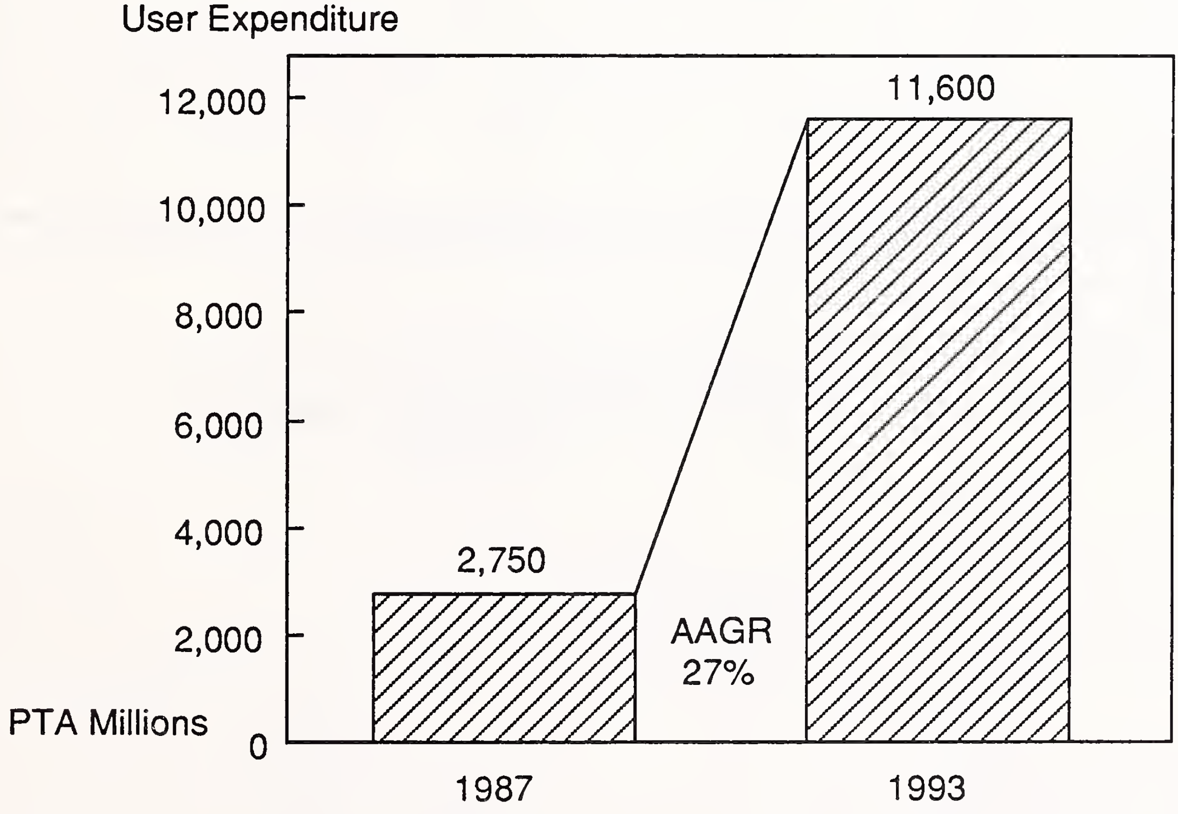
E
Spain

1. Market Forecast

INPUT forecasts that the Spanish Independent Maintenance market, the fastest growing in Europe, will grow at an average annual rate of 27% over the 1987 - 1993 period with revenues totalling PTA 2,750 million in 1987, reaching PTA 11,600 million in 1993, as shown in Exhibit IV-21.

EXHIBIT IV-21

INDEPENDENT MAINTENANCE MARKET GROWTH
SPAIN
1987 - 1993



The high growth of the market is to a large extent driven by rapid computerisation in Spain over the past few years and the increasing number of multivendor installations.

As shown in Exhibits IV-22 and IV-23, the TPM market in Spain in 1987 is estimated at PTA 1,650 million, increasing to PTA 7,250 by 1993. INPUT also estimates that manufacturers and dealers and distributors will play an active role in the Spanish Independent Maintenance market and that manufacturers' Independent Maintenance revenues will grow at an average annual rate of 35% in the 1987 - 1993 period.

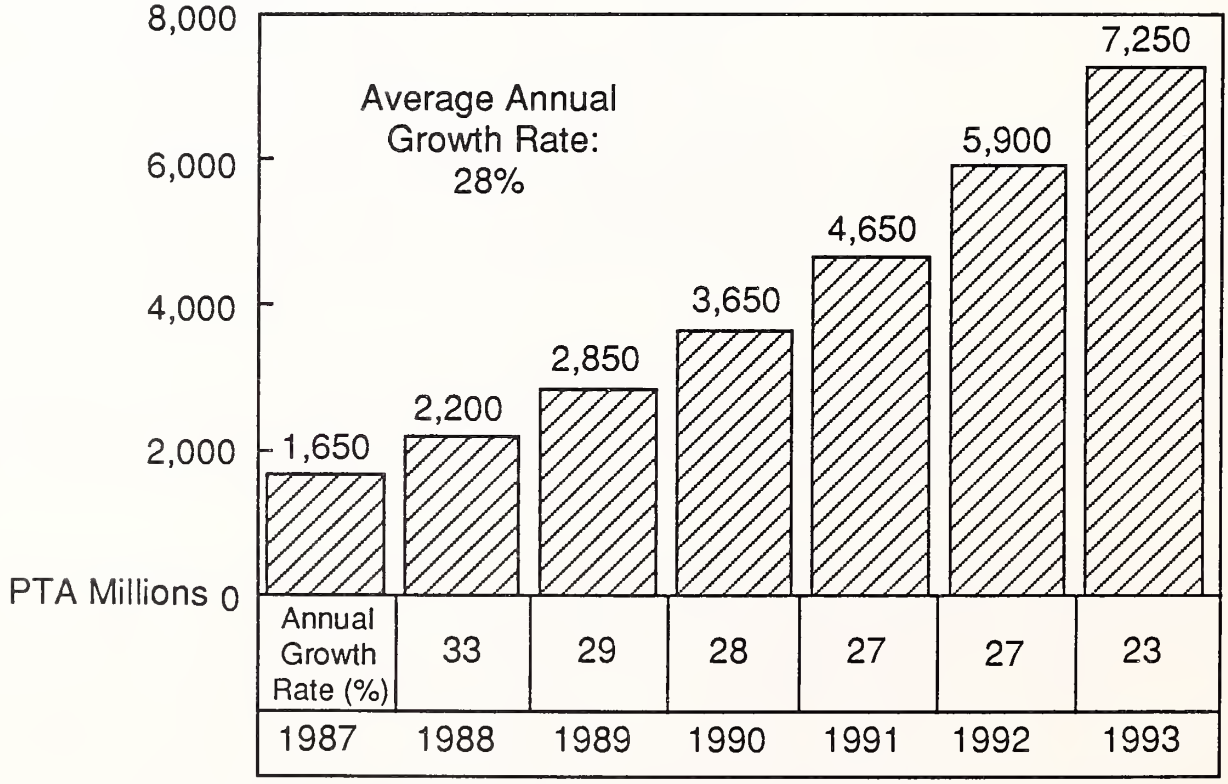
EXHIBIT IV-22

INDEPENDENT MAINTENANCE MARKET FORECAST SPAIN
(PTA Millions)

	1987	1988	1989	1990	1991	1992	1993	AAGR %
TPM Vendors	1,650	2,200	2,850	3,650	4,650	5,900	7,250	28
Dealers & Distributors	600	690	790	900	1,050	1,200	1,350	15
Hardware Manufacturers	500	900	1,400	1,800	2,200	2,500	3,000	35
TOTAL	2,750	3,790	5,040	6,350	7,900	9,600	11,600	27
Annual Growth %	N/A	37	33	26	25	22	21	N/A

EXHIBIT IV-23

TPM VENDOR MARKET GROWTH SPAIN



2. Market Characteristics

The increasing use of technology, has changed the service requirements of the Spanish market and TPM activity has begun, though on a small scale.

Spain's entry into the EEC has paved the way for new opportunities to be developed, and these include computer services. Exhibit IV-24 gives the characteristics of four Spanish TPM vendors. In all, INPUT estimates that there are currently about ten TPM companies in Spain, the largest of which are:

- Cero Informatica
- Eltec
- IPM
- Morsa
- SMS

Spanish TPM vendors primarily maintain IBM equipment in the main-frame and mini range, whilst for PCs and peripherals they include the major IBM-compatible range of equipment. INPUT's research revealed that there is only one Spanish TPM vendor, SMS Spain, that maintains equipment from other manufacturers, such as DEC, Hewlett-Packard, Wang and Siemens.

Given that TPM is a relatively new concept in Spain, most TPM vendors are currently only offering a limited range of services mainly involving hardware maintenance and some installation. Once again, SMS Spain is the only company currently offering other services that include: system software support, consulting, installation and planning.
The Spanish TPM respondents did not reveal any clear strategic plans to increase the range of services that they are currently offering, believing that they will expand their services whenever the need arises, as will be indicated by user requirements.

3. Growth Factors

TPM vendors see the increase in the use of information technology as one of the main factors that has contributed to the growth of TPM in Spain. Although TPM is a new concept in Spain, vendors believe that users welcome the opportunity of having an alternative source of maintenance. Other factors that vendors believe have contributed to the growth of TPM are:

EXHIBIT IV-24

LEADING TPM VENDORS IN SPAIN RANKED BY 1987 REVENUES SPANISH PESETAS (MILLIONS)

	1987 REVENUES	1988 FORECAST REVENUES	NO. OF ENGINEERS	NO. OF SERVICE CENTRES
ELTEC	530	750	100	8
CERO INFORMATICA	400*	N/A	12	3
SMS	200	300	35	15
IPM	100*	N/A	20	2

*INPUT Estimates

- Growing user confidence in TPM.
- Pricing advantage of TPM.
- Large users find it easier to have a single contractor.
- More-flexible and good-quality service.

Exhibit IV-25 shows some further comments on growth factors made by Spanish TPM vendors.

4. Market Inhibitors

All the respondents were very positive about the growth potential of TPM in Spain and believed that given that it is a newly developed market, there are at present very few factors inhibiting growth. Two vendors even believed that nothing stood in the way of the expansion of TPM in Spain.

More realistically, however, some vendors had certain concerns about the manufacturers' protective policies of obstructing the operations of TPMs by not providing them with spare parts and technical documentation when needed.

Another reason given was that by increasing the warranty period of equipment and with the increasing reliability of hardware, manufacturers

EXHIBIT IV-25

SPANISH VENDOR COMMENTS ON GROWTH FACTORS

'TPM is a new concept in Spain and has the advantage of offering an alternative source of service.'

'TPM has grown mainly because it is cheaper.'

'There is increasing confidence of companies in the TPM firms. Users can save money and obtain a better service.'

seek to buy time before users turn to a TPM. Comments made by Spanish vendors on inhibiting factors can be seen in Exhibit IV-26

EXHIBIT IV-26

SPANISH VENDOR COMMENTS ON FACTORS INHIBITING GROWTH

'TPM is growing in Spain, and there are no factors inhibiting its growth.'

'Longer warranties offered by manufacturers do not help us very much.'

5. Competitive Environment

When asked how they perceived the involvement of manufacturers in independent maintenance, Spanish respondents were very skeptical of the degree of success that manufacturers would have in this field, for the following reasons:

- Spanish users are turning to TPM because they are not satisfied with the flexibility or quality of service that they are currently obtaining from the manufacturers. In this case, it would be very difficult to convince users that the manufacturer would be able to offer either of these two once it becomes a TPM.

- TPM vendors have established the fact that they are independent service companies, offering only service. This has contributed considerably

to the users' acceptance of TPM. Manufacturers are engaged in both sales and service, which takes away the 'independent' element; they will therefore find it very difficult, if not impossible, to establish themselves as independent maintainers.

To date, there has been very little manufacturer involvement in the Spanish independent maintenance market. TPMs have emerged as a result of market demand for an alternative method of maintenance, and their number is still quite small.

INPUT expects that this state of affairs will change as more companies are attracted toward TPM and as new companies emerge. As for manufacturers, once they do establish a foothold in the independent maintenance marketplace, given their European-wide presence, they will be very unlikely to ignore the lucrative and developing market of Spain along with Portugal, which INPUT expects to be the next "new" market for TPM.

F Sweden

1. Market Forecast

As shown in Exhibit IV-27, INPUT forecasts that the Swedish Independent Maintenance market will grow at an average annual rate of 10% from SK 260 million in 1987 to SK 470 million in 1993.

Manufacturers' involvement in the Swedish independent maintenance market is expected to remain low, apart from the part played by Nokia through its subsidiary Complete Computer Care. Dealers and distributors maintenance activity, on the other hand, is believed to be significant in Sweden. Where TPM vendors or manufacturers may find it difficult to have a service centre in remote locations, dealers and distributors can benefit from local presence and the ability to offer maintenance services with relative ease. What the dealers and distributors need to acquire is the technical expertise which is not hard to obtain in Sweden.

INPUT therefore believes that in 1987 the dealers' and distributors' share of the Independent Maintenance market achieved SK 80 million (30%) of a total of SK 260 million, growing to SK 150 million (33%) in 1993, as shown in Exhibit IV-28.

The takeover of Ericsson by Nokia and the reorganisation of Ericsson Radio Systems, now known as Complete Computer Care, Sweden's second largest TPM, is expected to affect the 1987/88 growth of TPM,

EXHIBIT IV-27

INDEPENDENT MAINTENANCE MARKET GROWTH SWEDEN 1987 - 1993

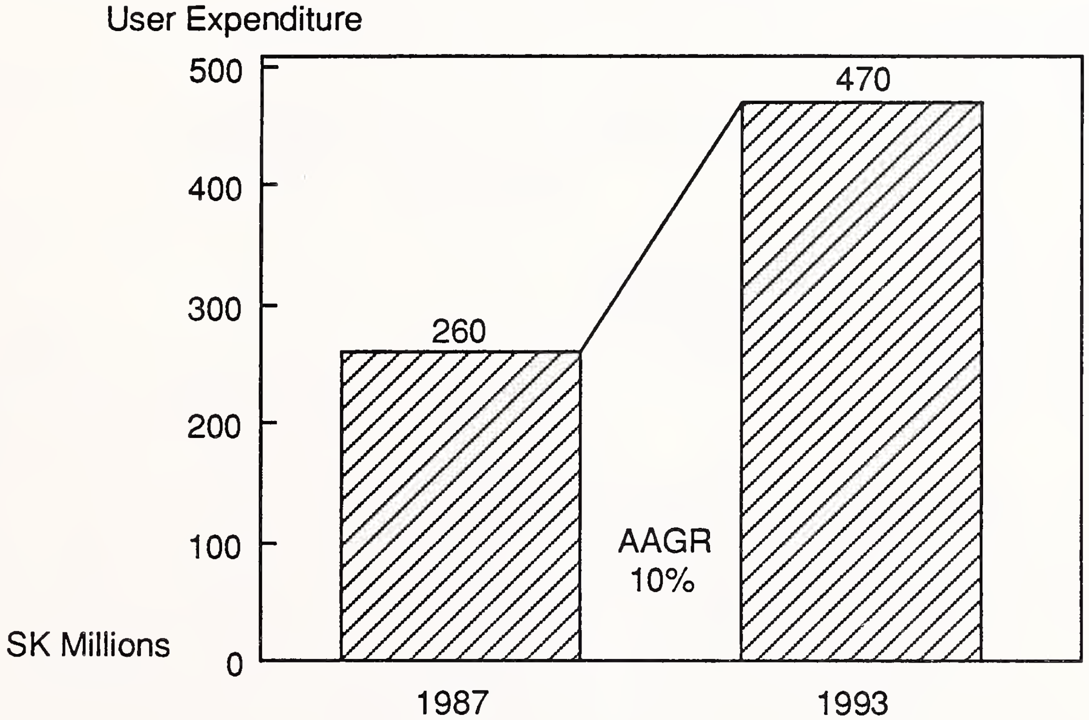


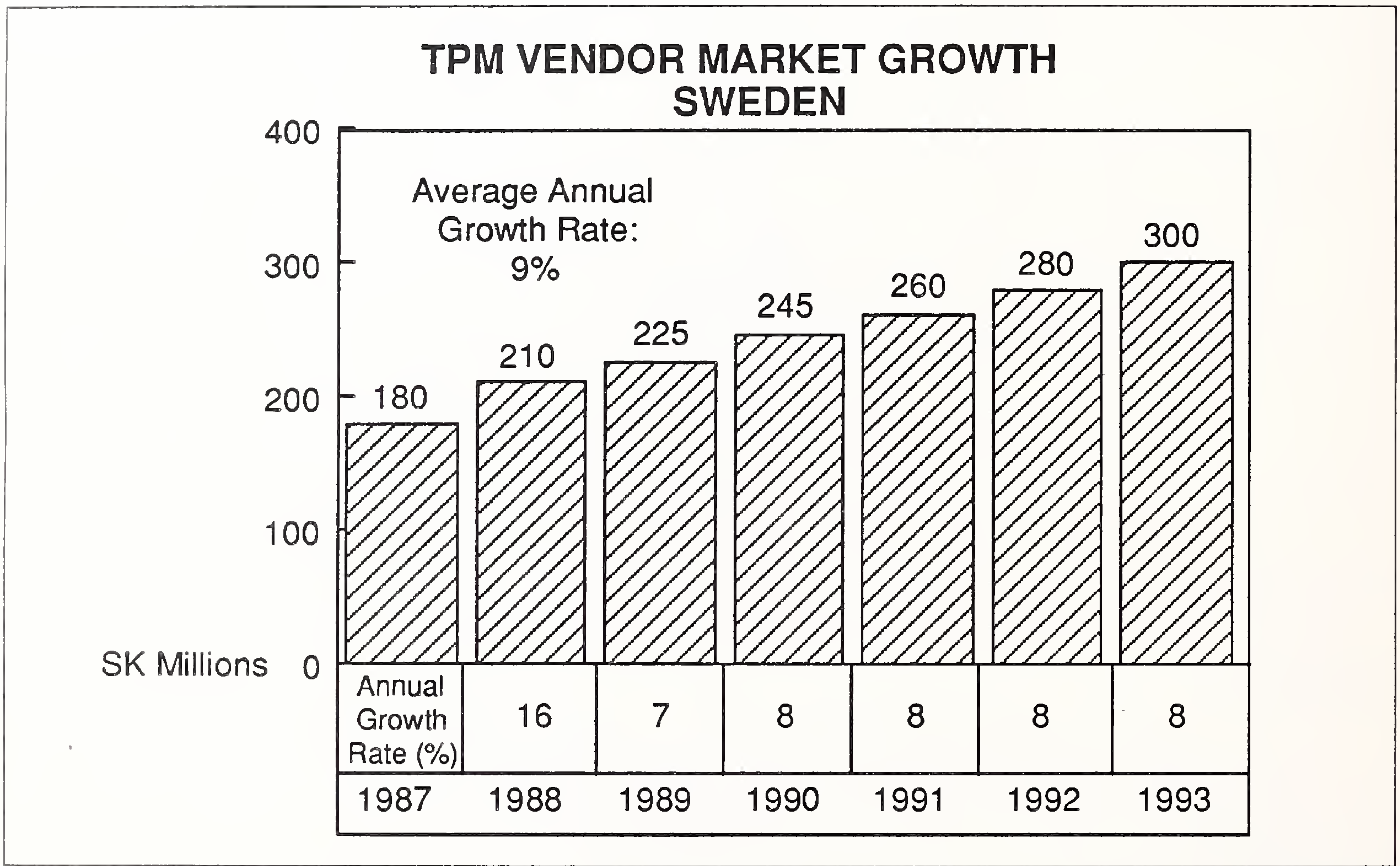
EXHIBIT IV-28

INDEPENDENT MAINTENANCE MARKET FORECAST SWEDEN
(SK Millions)

	1987	1988	1989	1990	1991	1992	1993	AAGR %
TPM Vendors	180	210	245	220	260	280	300	9
Dealers & Distributors	80	90	100	110	117	132	150	11
Hardware Manufacturers	—	—	—	5	8	13	20	60
TOTAL	260	300	325	360	385	425	470	10
Annual Growth %	N/A	15	8	9	8	9	9	N/A

forecast at 16%. This level of growth is not expected to be sustained in the following years, given the difficulties associated with providing TPM services in Sweden. INPUT estimates that TPM revenues in Sweden in 1987 were SK 180 million, growing at an average annual rate of 9% to reach SK 300 million in 1993, as shown in Exhibit IV-29.

EXHIBIT IV-29



2. Market Characteristics

Third-party maintenance in Sweden has been provided by a handful of companies—two large ones, Telub and Ericsson, and a very few small companies, the largest of which is Databolim. TPM in Scandinavia has so far been more successful in Sweden than in other Scandinavian markets, although Denmark is now becoming an important market for TPM. Telub is the largest TPM in Sweden, and because it is a state-owned company, it has had the advantage of winning large government maintenance contracts and has therefore established a clientele that consists mainly of government offices. Telub has offices in all Scandinavian countries, including Norway, Denmark and Finland.

Complete Computer Care is the second largest TPM in Sweden, operating only in Sweden. Complete Computer Care is the new name given to the computer maintenance activities of Ericsson, and the company believes the new name is a more accurate reflection of the services it offers.

Unlike other European countries, which have large numbers of installations, Scandinavian countries have a low density of installations, which are either concentrated around the capital of each country or scattered in places where access is extremely difficult, particularly in the winter months.

The two major TPM vendors offer a wide range of services that include: installation, planning, consultancy, cabling, project management and system upgrades. Service is available in the evenings and at week-ends, although respondents said that very few clients took this option.

The range of equipment maintained by the Scandinavian vendors is somewhat more limited than in other European countries, given that it only includes minis, PCs and peripherals. None of the TPMs are currently offering service on mainframes, which INPUT believes will be essential to the success of TPM in the future.

It is interesting to note that the two largest TPMs maintain exactly the same range of equipment, principally from IBM, DEC and Data General, which respectively have the largest share of the minicomputer market in Sweden.

Exhibit IV-30 shows the characteristics of the three largest Swedish TPM companies: Telub, Complete Computer Care and Databolim.

3. Growth Factors

Scandinavian TPM vendors believe that the main factor that has resulted in the growth of TPM in their country is that with TPM, users have access to an alternative source of maintenance.

Although as it was said above, there are on the whole fewer installations in Sweden than in other European countries, there are a considerable number of large installations that prefer TPM because it offers them a single contract for all or most of their equipment.

A third element that has led to the growth of TPM, particularly to the business expansion of the existing vendors, is the relative lack of compe-

EXHIBIT IV-30

LEADING TPM VENDORS IN SWEDEN RANKED BY 1987 TPM REVENUE SWEDISH KRONA MILLION

	1987 REVENUES	1988 FORECAST REVENUES	NO. OF ENGINEERS	NO. OF SERVICE CENTRES
TELUB	100	115	140	17
COMPLETE COMPUTER CARE	62	74	100	29
DATABOLIM	11	12.5	100	14

tition. TPM vendors like Telub and Complete Computer Care have therefore been able to concentrate all their activities on developing their own market niches and on competing more with manufacturers than amongst TPMs. Some vendor comments are given in Exhibit IV-31.

EXHIBIT IV-31

SWEDISH VENDOR COMMENTS ON GROWTH FACTORS

'Users are quite open to TPM, particularly large companies who prefer to have single-source maintenance.'

'There are very few TPMs in Sweden, so competition is limited.'

4. Market Inhibitors

TPM vendors in Sweden do not believe that there are many factors hindering the growth of TPM. They do, however, feel that the rate of growth of TPM in Sweden is slow compared with other European countries.

Scandinavian users' resistance to TPM, was considered by the vendors as playing an important role in the slow growth of TPM in Sweden.

5. Competitive Environment

TPM competition in Sweden is limited to a handful of vendors. Telub, which is the largest TPM, has a presence across all Scandinavian countries and expanded its geographic coverage into Europe with the acquisition of Bitronic in Germany.

Manufacturer involvement in independent maintenance is still very limited in Sweden, and TPM vendors did not see manufacturers as posing a threat to the TPM market. One respondent had a very positive attitude toward the entry of manufacturers into independent maintenance, welcoming the competition and believing that it would help improve the cooperation that is needed between the two.

G
The United Kingdom

1. Market Forecast

As shown in Exhibit IV-32, INPUT forecasts the U.K. Independent Maintenance market to grow at an average annual rate of 18% in the next five years, totalling £535 million by 1993.

INPUT forecasts increased competition in the U.K. Independent Maintenance market from equipment vendors. In 1987, Independent Maintenance revenues derived by equipment vendors in the U.K. are estimated at £15 million, increasing to £40 million in 1988. The main reason for the large increase experienced in 1988 is that British Olivetti has successfully signed large Independent Maintenance contracts in the U.K., the largest being valued at £36 million over a three-year period.

It is expected that equipment vendors' interest in the Independent Maintenance market will continue as they increasingly compete with independent vendors. By 1993, INPUT estimates that the equipment vendors' share of the total Independent Maintenance market of £535 million will increase to £105 million, as can be seen in Exhibit IV-33.

TPM vendors' revenues are estimated at £170 million in 1987, growing at an average annual rate of 15% to reach £400 million by 1993. As shown in Exhibit IV-34, a steady annual growth of around 15% is forecast, given the maturity of this market.

EXHIBIT IV-32

INDEPENDENT MAINTENANCE MARKET GROWTH
U.K.
1987 - 1993

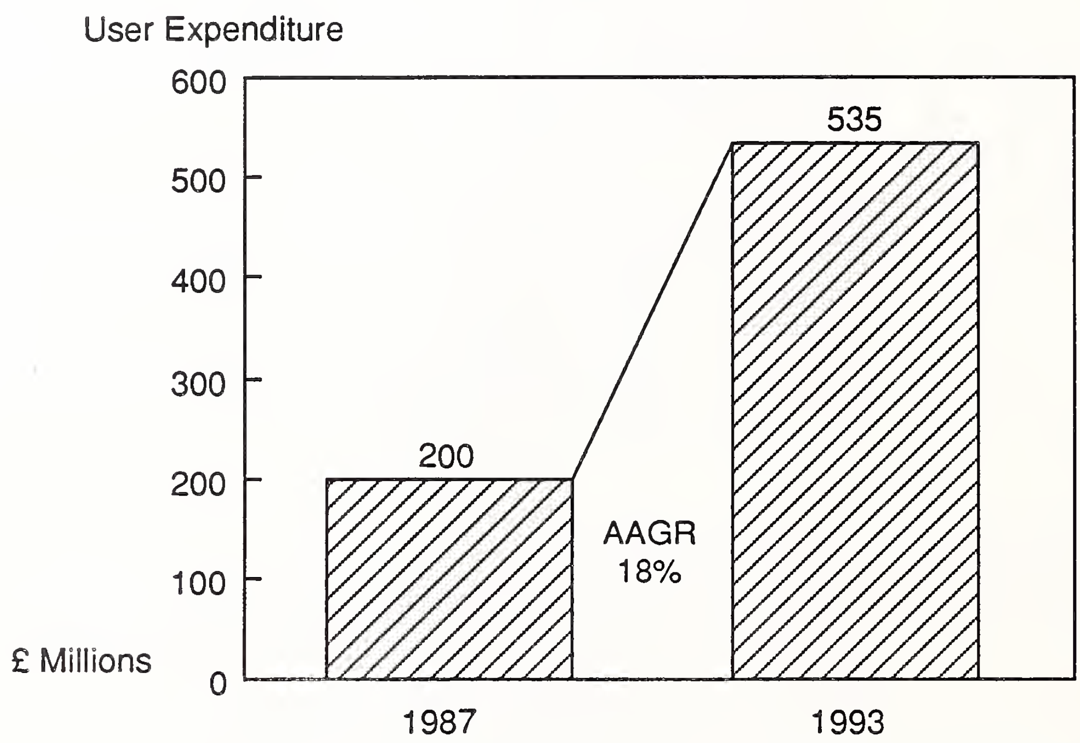
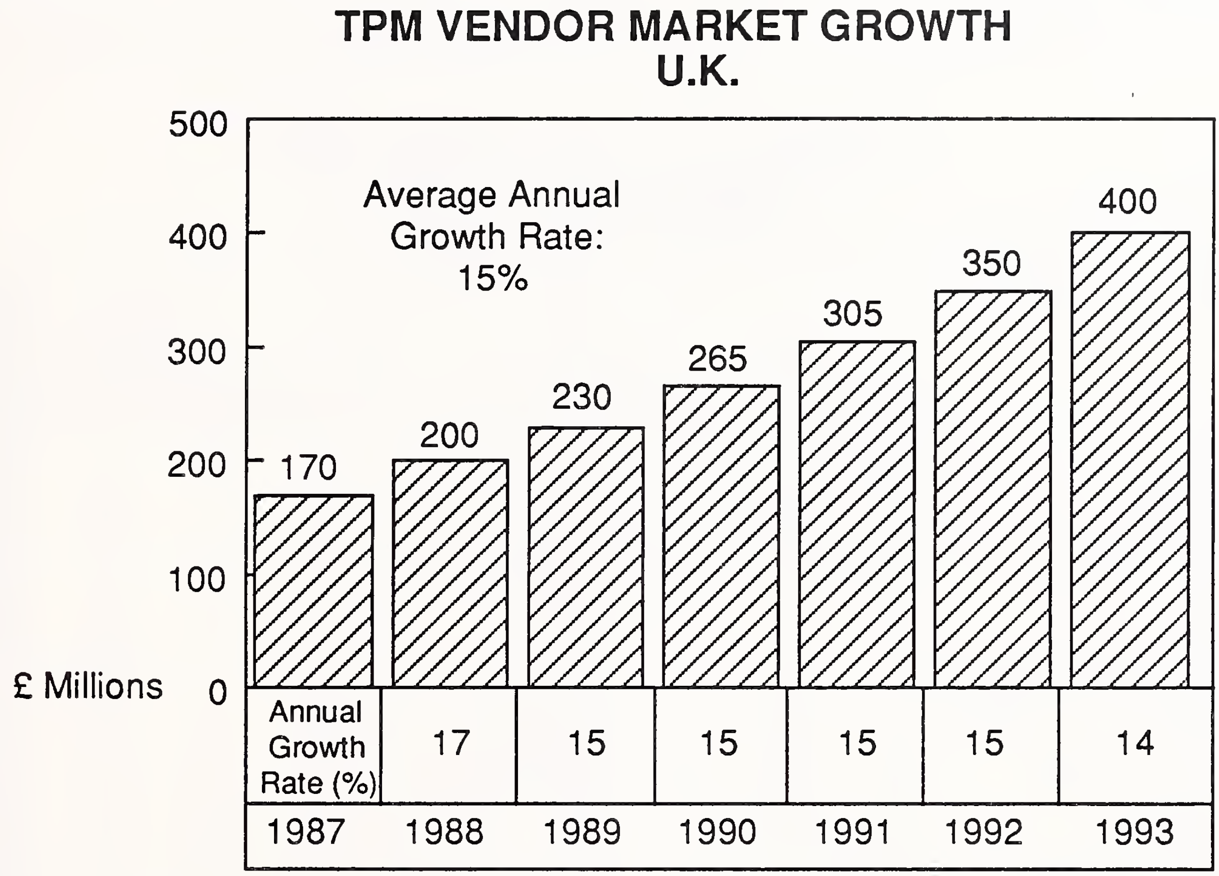


EXHIBIT IV-33

INDEPENDENT MAINTENANCE MARKET FORECAST
U.K.
(£ Millions)

	1987	1988	1989	1990	1991	1992	1993	AAGR %
TPM Vendors	170	200	230	265	305	350	400	15
Dealers & Distributors	15	17	19	22	25	28	30	12
Hardware Manufacturers	15	40	55	65	75	90	105	38
TOTAL	200	257	304	352	405	468	535	18
Annual Growth %	N/A	28	18	16	15	15	14	N/A

EXHIBIT IV-34



2. Market Characteristics

Third-party maintenance has been established in the U.K. longer than in other European countries. The U.K. market benefits from a very large installed base from a broad array of manufacturers, equipment and products. TPM vendors have taken full advantage of the service opportunities in this market by offering single-source maintenance.

INPUT estimates that there are currently approximately 200 TPM companies in the U.K., most of which are small companies maintaining low-range equipment, i.e., personal computers and peripherals. The larger companies tend to be the ones that offer maintenance services on a wider range of equipment encompassing mainframes and mini-computers as well as PCs and peripherals. Exhibit IV-35 lists the U.K.'s top 20 independent maintenance companies, ranked by 1987 revenues.

It is interesting to note that the companies that do maintain mainframes specialise in offering maintenance services on equipment from the major manufacturers that have a large number of installations—namely, IBM, DEC, ICL, Unisys and Honeywell-Bull.

EXHIBIT IV-35

LEADING TPM VENDORS IN THE U.K. RANKED BY 1987 REVENUES (POUNDS MILLION)

	1987 REVENUES	1988 FORECAST REVENUES	NO. OF ENGINEERS	NO. OF SERVICE CENTRES
DPCE	20	N/A	400	34
CFM	21.4	30	480	22
SORBUS	13	15	260	7
EXTEL	12	N/A	260	24
DATA LOGIC	8	9	170	19
COMPUTERAID	8	10	220	11
DDT	7.5	N/A	185	10
MAINSTAY	6.8	N/A	80	5
KODE SYSTEMS	5.2	N/A	110	8
RELIABILITY	5	6.5	110	10
KMS	4.5	7	80	16
MERIDIAN	3.8	5	35	3
DIGITAL COMPUTER SERVICES	3.6	5.1	49	5
QUEST	3.4	5	86	6
ATM	2.5	3.2	68	10
JAECROW	2.0	3.2	60	2
SYSMATIC	1.8	2.7	40	5
COMPUTER REPAIR CENTRE	1.5	3	45	2
ECONOCOM	1.5	3	20	3
TPM COMPUTER SERVICES	1.2	2	20	2

The majority of U.K. TPM vendors now offer a wide range of maintenance-related services that include: hardware maintenance, installation, planning, cabling, etc.

3. Growth Factors

Growth of third-party maintenance in the U.K. has been promoted primarily by the increasing user awareness of TPM and users' acceptance of TPM as a viable alternative to the services offered by equipment manufacturers.

In the U.K., for example, the British government has mandated that all government tenders should include TPM vendors. This is a clear indication of the increasing popularity of TPM and shows that TPMs have succeeded in establishing a good reputation in the service market for their ability to offer a quality service.

From the TPM vendors' point of view, their ability to offer one-stop shopping, or single-source maintenance, has been the principal factor contributing to the growth of their business.

Some vendors, however, believe that the price advantage of TPM is still an important element in promoting TPM and attracting users away from contracting their maintenance to the equipment manufacturers. Exhibit IV-36 lists some vendor comments on factors contributing to the growth of TPM in the U.K.

EXHIBIT IV-36

U.K. VENDOR COMMENTS ON GROWTH FACTORS

'TPM offers a wide range of services and is therefore a good alternative to manufacturer service.'

'TPM has grown because of the demand for professional personalised service rather than the corporate service offered by manufacturers.'

'We talk to clients and meet their requirements'.'

'TPM offers a number of advantages: total site maintenance, cheaper than manufacturers, ability to work flexibly.'

Although one-stop shopping is what vendors see as being the main advantage of TPM, all the vendors interviewed for this survey also stressed that users attach a large degree of importance to the quality of service that they receive.

U.K. TPM vendors also attribute the growth of TPM to the fact that they are able to provide users with a personalised service as opposed to the manufacturers' corporate approach. In this respect, TPMs are thought to be able to offer a more 'flexible' service—i.e., service that is required by the user without the restrictions of set levels of service.

As mentioned previously, a large number of U.K. TPM vendors specialise in the maintenance of PCs and peripherals. This is explained by the increasing use of personal computers and the manufacturers' general willingness to allow third parties, be it dealers, distributors or independent maintenance companies, to maintain this range of equipment.

Another important element that vendors see as having promoted the growth of TPM is the TPM's independent stance in the market. All vendors interviewed saw this as representing a major advantage, and a tendency on the part of vendors to call themselves 'independent maintenance' companies, as opposed to 'third party' companies is now being manifested.

4. Market Inhibitors

Despite the increasing acceptance of TPM, vendors still detect a certain amount of conservatism amongst users that are reluctant to "upset" their equipment manufacturer by going to a third-party company.

However, vendor respondents did not consider user conservatism to represent a major threat to the growth of their business. The most important factors seen by vendors as hindering the more widespread use of TPM were:

The presence of a number of very small companies, branded as 'cowboys', offering TPM and not being able to provide users with a good quality of service, ruining the image and reputation of TPM.

Heavy discounting by certain companies, which destroys the competition and increases the pressure on margins.

Manufacturers' obstructive tactics of not providing spare parts and technical information to TPMs and their lack of will to cooperate within a competitive market.

Some vendors also pointed out that one of the problems they were facing was that of increasing equipment reliability, which makes users, particularly PC users, believe that they do not need a maintenance contract because their impression is that PCs do not break down.

Although some of the respondents welcomed the increasing competition from manufacturers, others did see their involvement as representing a serious threat. The increased period of warranties on equipment along with manufacturers' approach to bundling service were also recognised as areas that have begun to cause concern amongst TPM vendors.

5. Competitive Environment

The U.K. independent maintenance market is one of the most competitive in Europe by virtue of the number of companies active in this market. There are two distinct sources of competition in the U.K. TPM market: one is amongst TPM vendors themselves; the other is competition from the manufacturers.

Over the past 12 months, there has been increased competition in the U.K. TPM marketplace from manufacturers—namely, Olivetti, Honeywell-Bull and Unisys. To date, the most aggressive of the three has been British Olivetti, which won a major contract with Barclays Bank, one of the leading U.K. commercial banks.

EXHIBIT IV-37

U.K. VENDOR COMMENTS ON FACTORS INHIBITING GROWTH

'Below-par service from the many cowboy TPMs is a serious threat.'

'The price of maintenance is falling and exerting pressure on margins.'

'Personal-computer users wrongly believe that PCs never break down.'

In spite of the increased manufacturer involvement in TPM, TPM vendors still do not appear to show signs of concern—some because they welcome the competition and others because they do not believe that manufacturers have much chance of success in this market.

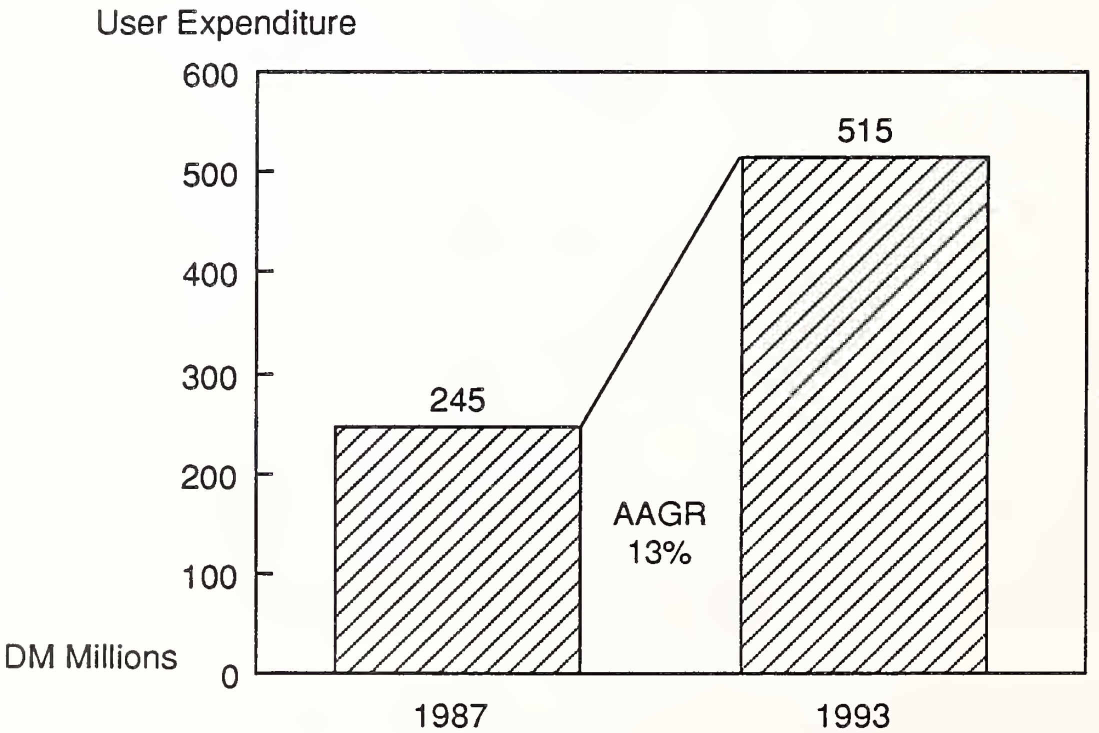
H West Germany

1. Market Forecast

The German Independent Maintenance market is expected to grow at an average annual rate of 13% between 1987 and 1993. As shown in Exhibit IV-38, Independent Maintenance revenues generated in 1987 are estimated to have totalled DM 245 million and are forecast to grow to DM 515 million in 1993.

EXHIBIT IV-38

INDEPENDENT MAINTENANCE MARKET GROWTH WEST GERMANY 1987 - 1993



Growth of TPM in Germany is the second slowest in Europe, a factor attributed primarily to German user conservatism towards TPM and their reluctance to break away from the manufacturers. As with other European countries, however, INPUT anticipates increased manufacturer activity in independent maintenance in Germany. A breakdown of reve-

nues generated by TPMs, dealers and distributors and hardware vendors is shown in Exhibit IV-39.

EXHIBIT IV-39

INDEPENDENT MAINTENANCE MARKET FORECAST WEST GERMANY
(DM Millions)

	1987	1988	1989	1990	1991	1992	1993	AAGR %
TPM Vendors	140	165	190	218	245	275	310	14
Dealers & Distributors	100	112	125	140	155	170	190	11
Hardware Manufacturers	5	6	7	8	10	12	15	20
TOTAL	245	283	322	366	410	457	515	13
Annual Growth %	N/A	11	14	14	12	12	12	N/A

TPM vendors' revenues are estimated to have totalled DM 140 million in 1987 and are forecast to reach DM 310 million in 1993, representing an average annual growth rate of 14%, as can be seen in Exhibit IV-40.

2. Market Characteristics

The German market is the largest European market in terms of the number of hardware installations but has typically been one of the most difficult markets for TPM penetration. The reason for this has been a very strong user resistance to TPM and a traditional view that service is best provided by the manufacturer of any equipment.

Given these difficulties, there are few TPM companies in Germany relative to the size of the market. TPMs currently operating in Germany include:

- Dataway
- Econocom
- Interscan
- SMS International
- Telub Bitronic

EXHIBIT IV-40

TPM VENDOR MARKET GROWTH WEST GERMANY

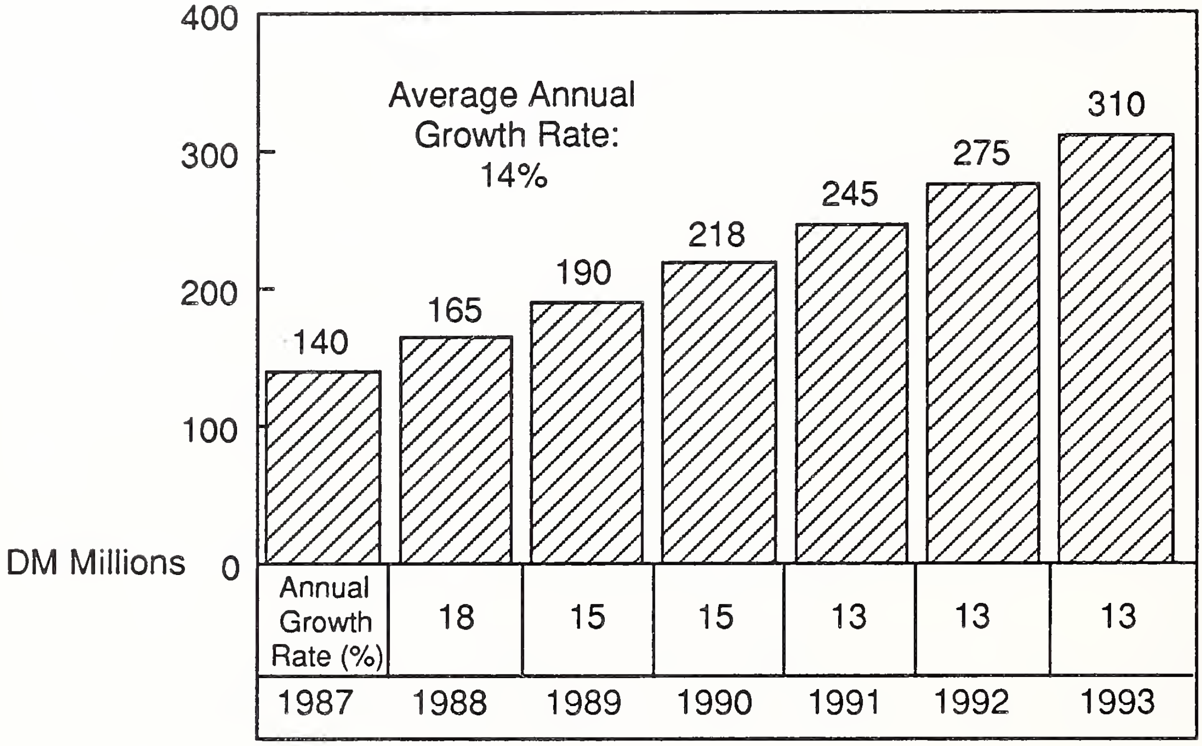


EXHIBIT IV-41

LEADING TPM VENDORS IN WEST GERMANY RANKED BY 1987 REVENUES (DM MILLIONS)

	1987 REVENUES	1988 FORECAST REVENUES	NO. OF ENGINEERS	NO. OF SERVICE CENTRES
TEKSERV	46 *	N/A	100	12
SORBUS	25	30	100	6
XTEC	23 *	N/A	—	—
WIGO	10	17	110	22
TELUB BITRONIC	5	7	40	6

* INPUT Estimate

- Tekserv
- XTEC

A profile of the major TPM vendors in Germany is shown in Exhibit IV-41.

German TPM vendors offer a wide range of services other than pure hardware maintenance, including: installation, consulting, environmental planning and network installation. As in France, the use of networks is increasing in Germany, and although the German telecommunications market is the most rigidly PTT controlled in Europe it is thought that TPMs have some opportunity of offering support services in this sector, given that it is typically a multivendor environment.

3. Growth Factors

German respondents attributed the growth of TPM to the increasing user willingness to accept TPM primarily because TPM offers single-source maintenance to multivendor sites.

Although there has been limited growth capability for TPM in Germany, INPUT believes that this situation will change because of the changing attitude of the users and that of the TPM vendors themselves.

Vendors realise that in order to attract more users, they have to use effective marketing techniques. Pricing is one example with which TPMs can give themselves a competitive edge over manufacturers. A second method used by all TPMs throughout Europe is the provision of flexible maintenance contracts to meet with the requirements of the user.

One of the respondents indicated that another area of growth opportunity for TPMs is to maintain equipment that is no longer serviced by the manufacturer. By servicing this type of equipment, TPMs have an opportunity of expanding their user base.

4. Market Inhibitors

There is, according to German TPM vendors, a strong element of user resistance to TPM in Germany, of which TPM vendors are well aware. Vendors felt that German users tend to be both 'loyal' to the manufacturer of their equipment and conservative in their attitude to change.

Unlike some of their European counterparts, German TPM vendors are beginning to feel threatened by the involvement of manufacturers in TPM. One respondent noted that manufacturers are entering the independent maintenance market by maintaining OEM equipment that is attached to their system, even if the manufacturer is not 'officially' active in TPM.

Another inhibitor concerns the longer warranties on hardware and the maintenance policies of manufacturers. In addition to these, the lowering of hardware prices has also led users to expect lower maintenance prices, making it difficult for small TPM vendors to run their businesses at profitable levels.

5. Competitive Environment

German TPM vendors foresee increased manufacturer involvement in independent maintenance, but believe that the market will be just as difficult to penetrate for the manufacturers as it has been for the TPMs. Vendors noted that the positive effect of having to compete against manufacturers in TPM is that it enhances the image of TPM.

As with some other TPM vendors in Europe, one German TPM vendor has found a market niche in becoming the 'service partner' of manufacturers that either no longer maintain a certain range of equipment or that do not have a service organisation in Germany.

The opportunity for German TPM vendors to expand the scope of their activities into Austria and Switzerland is also present, given that there are strong economic links amongst the three. More important, however, the typical barriers that exist in Europe between different countries, namely language and cultural differences, are in this case minimal.

EXHIBIT IV-42

GERMAN VENDOR COMMENTS ON GROWTH FACTORS

'TPM offers a cheaper service than the manufacturers.'

'Users are now more willing to accept TPM because it offers them a choice.'

'TPM has grown because it offers single-source maintenance.'

EXHIBIT IV-43

GERMAN VENDOR COMMENTS ON FACTORS INHIBITING GROWTH

'German users are sometimes reluctant to sever links with the manufacturers.'

'Users in Germany are very conservative.'

'Longer warranties and the interest of manufacturers in offering TPM are a threat to our business.'

I

Other European Countries

1. Austria

INPUT forecasts that the Austrian independent maintenance market totalled AS 110 million in 1987, reaching AS 400 million by 1993, representing an average annual growth rate of 24%. (See Exhibits IV-44 and IV-45.)

Equipment manufacturers are the principal service providers in Austria, and TPM has not yet gained widespread popularity in this market.

As in other European markets, however, the Austrian user base of information technology products is increasing, and INPUT believes that this will lead to increased TPM activity in this country in the future. At present, TPM services in Austria are carried out to a large extent by dealers and are limited to the maintenance of personal computers and peripherals.

The largest TPM vendor in Austria is S&S Electronik & Computer Technik, which has found a niche in the banking and government sectors. The company offers hardware maintenance on PCs, terminals and ATMs, but specialises in providing network services that include network installation and interfacing.

2. Belgium

The Belgian independent maintenance market is estimated by INPUT to have reached BF 990 million in 1987, increasing to BF 2,780 million by 1993, growing at an average annual rate of 18%. (See Exhibits IV-46 and IV- 47.)

EXHIBIT IV-44

INDEPENDENT MAINTENANCE MARKET GROWTH AUSTRIA 1987 - 1993

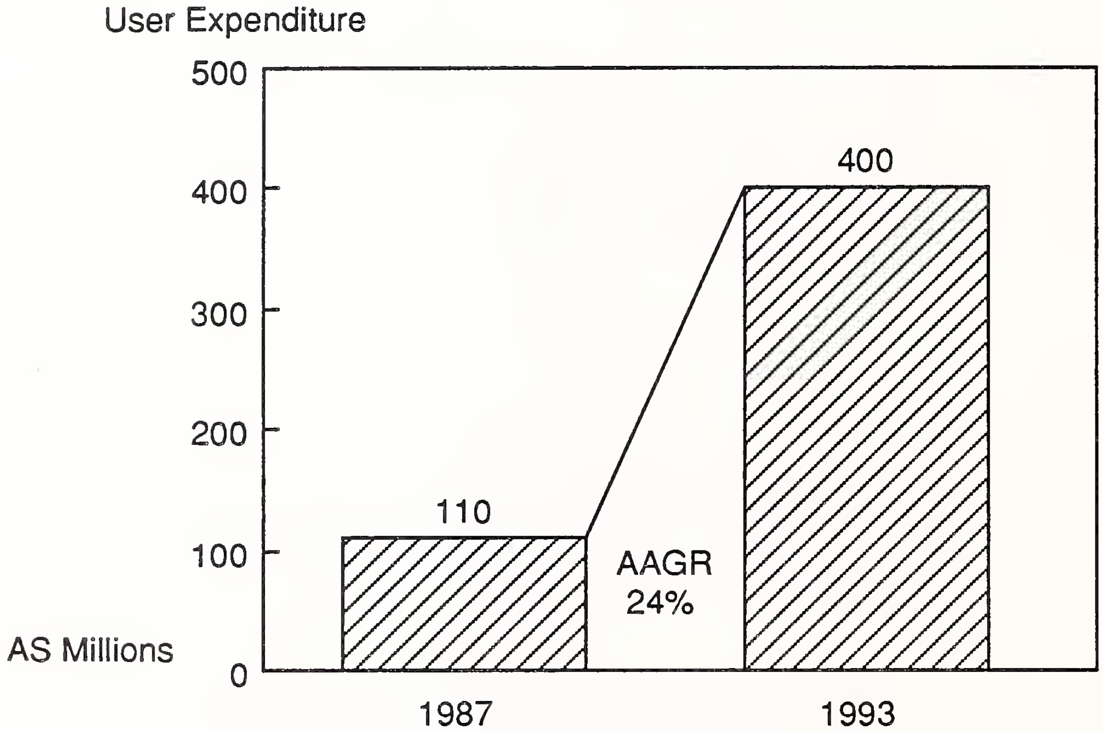


EXHIBIT IV-45

INDEPENDENT MAINTENANCE MARKET FORECAST AUSTRIA
(AS Millions)

	1987	1988	1989	1990	1991	1992	1993	AAGR %
TPM Vendors	60	85	115	150	180	200	235	26
Dealers & Distributors	50	55	60	70	75	90	100	12
Hardware Distributors	—	—	10	15	25	40	65	60
TOTAL	110	140	185	235	280	330	400	24
Annual Growth %	N/A	27	32	27	19	18	21	N/A

EXHIBIT IV-46

INDEPENDENT MAINTENANCE MARKET GROWTH BELGIUM 1987 - 1993

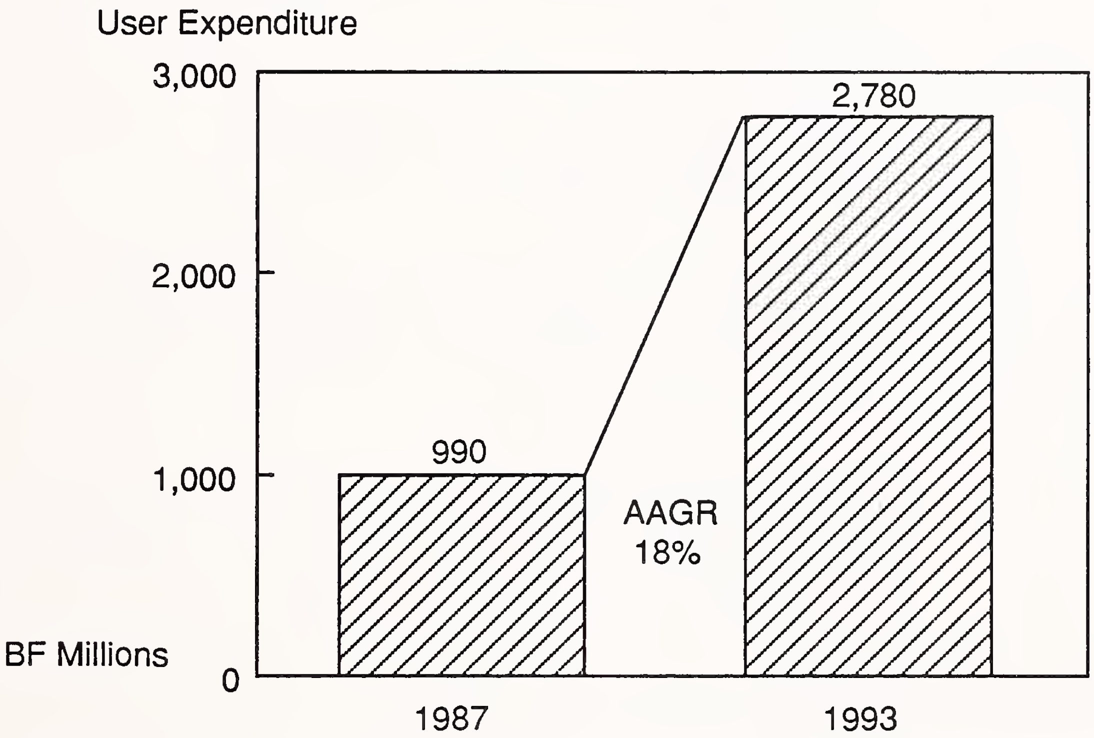


EXHIBIT IV-47

INDEPENDENT MAINTENANCE MARKET FORECAST BELGIUM (BF Millions)

	1987	1988	1989	1990	1991	1992	1993	AAGR %
TPM Vendors	800	950	1,140	1,330	1,525	1,715	1,905	15
Dealers & Distributors	190	210	225	265	305	340	380	12
Hardware Distributors	—	—	75	110	190	300	495	60
TOTAL	990	1,160	1,440	1,705	2,020	2,355	2,780	18
Annual Growth %	N/A	17	24	18	18	16	181	N/A

INPUT estimates that there are currently approximately 15 independent maintenance companies in Belgium. These include:

- DPCE
- DTC Service
- Econocom
- Mainstay
- SMS
- Tekserv
- Thyssen Field Service

The proximity of Belgium to the Netherlands and Germany has enabled TPM companies in these countries to expand their businesses into the Belgian market, as exemplified by: Geveke, DTC Service, Thyssen and Tekserv.

Although manufacturer-provided maintenance is the principal source for service in Belgium, the establishment of new TPM companies in Belgium over the past two years is a clear indication of the increasing popularity of independent maintenance in this market.

3. Rest of Europe

Independent maintenance activity in other Western European countries, namely Denmark, Finland, Greece, Norway, Portugal and Switzerland is at present very limited. Telub, the Swedish TPM company, is the largest TPM vendor in Scandinavia with six service centres in Finland, four in Norway and three in Denmark.

There are two main reasons why TPM is not as popular in these countries as in other European countries:

- Low density of computer users

- Dominance of manufacturers to the extent that there are very few multivendor installations

INPUT believes that given the costs associated with the setting up of a TPM operation—i.e., human resources and levels of investment required—it is unlikely that many new independent maintenance vendors will be attracted to these markets. The market for manufacturer-provided independent maintenance, however, is believed to be the most attractive given their established operations and the inevitable move by users in these countries to have equipment from more than one vendor.

V

User Environment

V

User Environment

A
TPM User Base Penetration

This analysis is based on 1,348 user interviews throughout Europe. Of these 5% used a TPM for their CPU, 7% used a TPM company for servicing their peripheral equipment, and 12% contracted the maintenance of their personal computer to a TPM company, as shown in Exhibit V-1.

EXHIBIT V-1

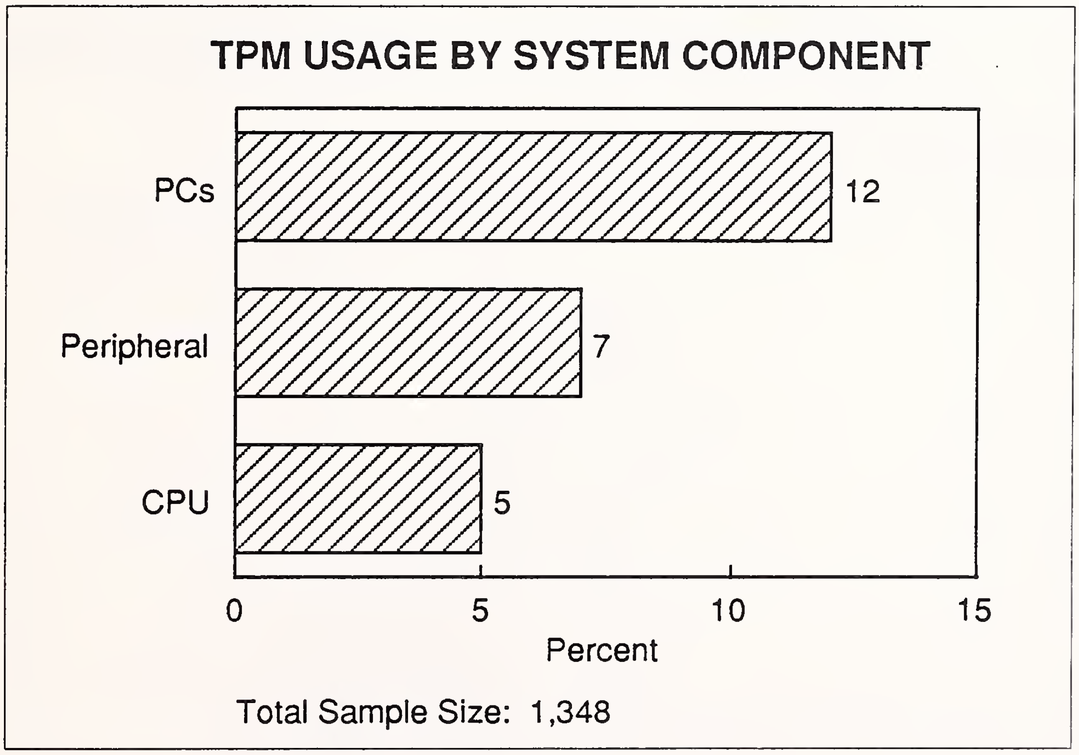


Exhibit V-2 shows the breakdown of CPU, Peripheral and PC TPM users by country. Exhibits V-3 to V-5 show the percentage of TPM users by country and by system component.

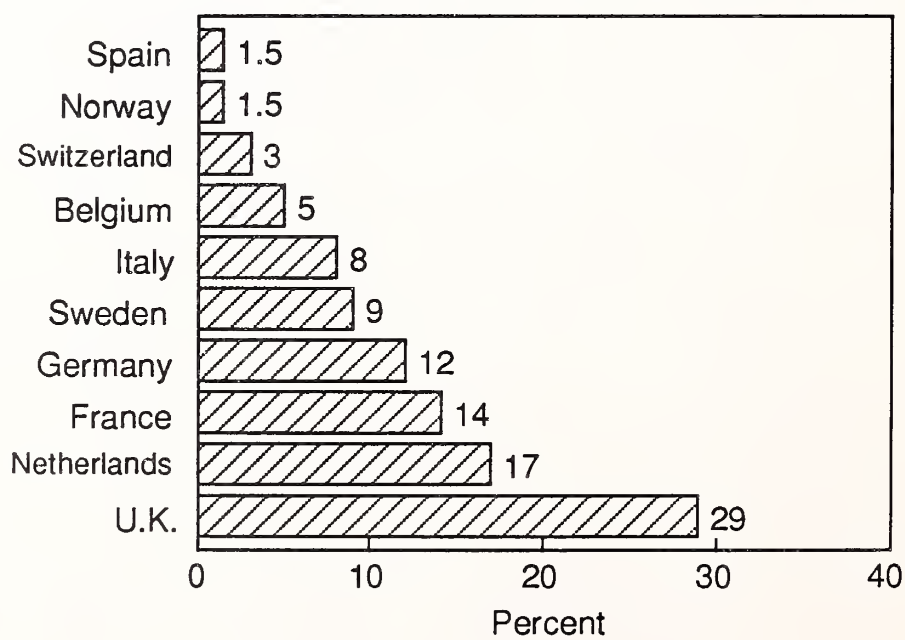
EXHIBIT V-2

NUMBER OF TPM USERS BY COUNTRY

Country	CPU	Peripheral	PC	Total Sample Size
Belgium	3	9	5	98
France	9	12	12	205
Germany	8	6	4	207
Netherlands	11	11	3	87
Italy	5	8	11	146
Norway	1	1	5	27
Spain	1	4	4	72
Sweden	6	9	13	78
Switzerland	2	3	3	135
U.K.	19	30	66	293
TOTAL	65	93	126	1,348

EXHIBIT V-3

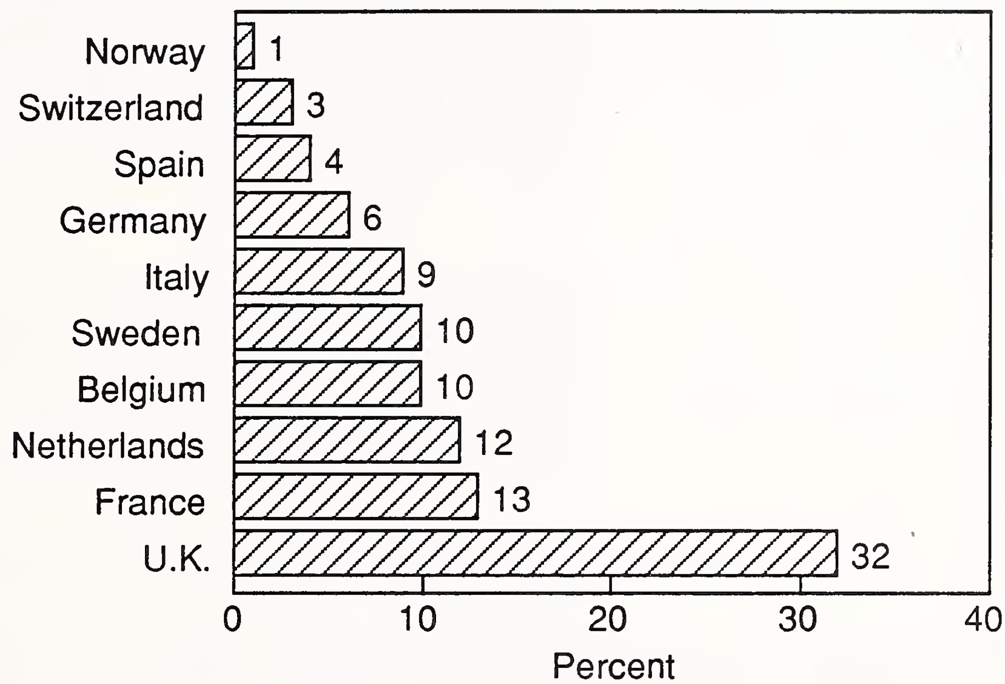
PERCENT CPU TPM USERS IN EUROPE



Sample Size: 65

EXHIBIT V-4

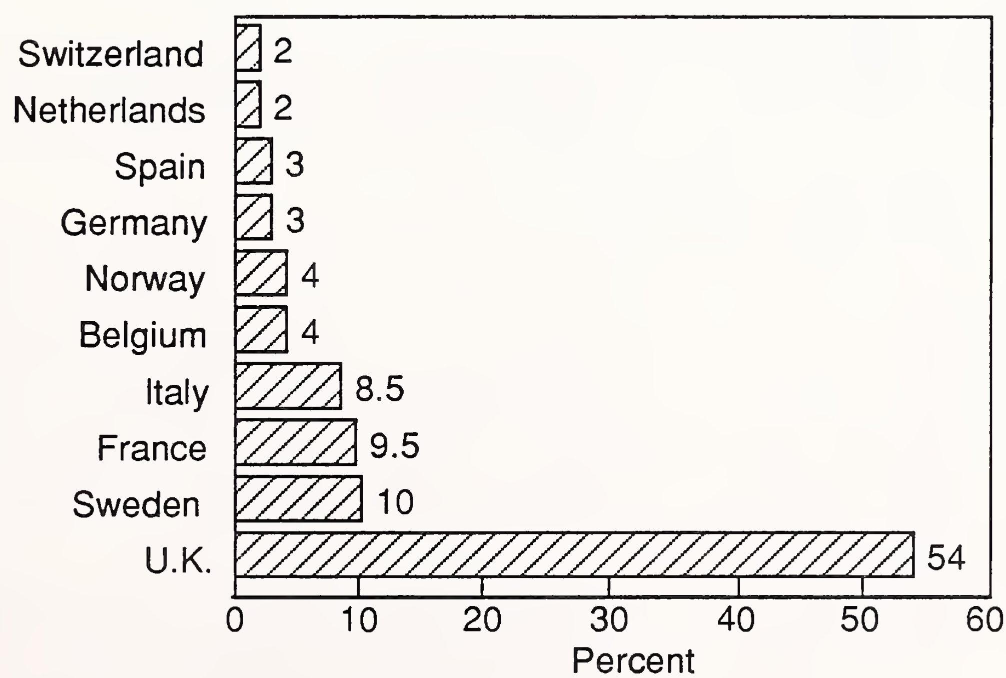
PERCENT PERIPHERAL TPM USERS IN EUROPE



Sample Size: 93

EXHIBIT V-5

PERCENT PC TPM USERS IN EUROPE



Sample Size: 126

These exhibits indicate that:

- U.K. TPM users for all system components outnumber all other European countries, particularly in the PC category, where U.K. TPM users represent 54% of the sample. These results reinforce the fact that the U.K. has the highest market penetration of TPM vendors and indicate that U.K. users are the most amenable to alternative sources of maintenance.

- TPM penetration in the Netherlands for CPU users is 17%, the second highest in Europe. In INPUT's 1987 survey of the European TPM markets, TPM users in the Netherlands accounted for 5% of the total. These results indicate successful marketing by Dutch TPM vendors, resulting in increased acceptance of TPM in this market.

- Although Germany is considered one of the most difficult markets for TPM vendors, the results of the survey show a 12% penetration for users contracting the maintenance of their CPU to a TPM. The percentages for peripheral and PC users, however, are low at 6% and 3% respectively.

- France where TPM has been growing rapidly over the past few years, lies in third position for CPU (14%) and PC (9.5%) TPM users, and second for peripherals with 13%.

B
User Motivators

Users were asked to state the reason they had chosen to use a TPM vendor, and the most frequently mentioned reason was cost. The user sample analysis is shown in Exhibit V-6.

In France, however, the availability of TPM as local service was the main reason stated. It is interesting to note that although TPM vendors believe that the main reason for the success of TPM is that TPM can offer single-source maintenance and flexibility of service, user views differ. As shown in Exhibit V-7, which compares the results of INPUT's 1988 survey with 1987, in both years, single-source maintenance was the fourth most frequently mentioned reason.

As can be seen in this exhibit, cost is the principal reason given for choosing TPM. Efficiency, convenience and single-source maintenance were all rated lower. Efficiency and convenience can be differentiated as follows. Efficiency implies an overall image of good organisation. It implies that the service is provided in an economic and effective way. In

EXHIBIT V-6

REASONS FOR USING TPM
CPU USERS—EUROPE

	Belgium	France	Germany	Holland	Italy	Norway	Spain	Sweden	Switzerland	U.K.	TOTAL
Cost	2	2	8	11	4	—	1	4	2	11	45
Local Service	—	5	1	—	1	1	—	2	—	6	16
Single-Source Maintenance	—	3	2	2	—	—	1	—	—	3	11
TPM Service Better	1	1	—	3	1	—	—	—	—	3	9
TPM Service More Flexible	—	1	2	—	2	—	—	—	—	3	8
Other	—	1	—	—	1	—	—	1	—	1	4
Total No. of TPM Users Interviewed	3	9	8	11	5	1	1	6	2	19	65

Note: Multiple responses allowed.

EXHIBIT V-7

RANKING OF REASONS FOR USING TPM
1988 & 1987

Reason for Using TPM	1988	1987
Cost	1	1
Efficiency	2	3
Convenience	3	2
Single-Source Maintenance	4	4
Sample Size	65	73

distinction, convenience will imply ease of use in a number of ways for the client, for example: local geographic proximity; easier access to vendor management for discussing problems or future plans; more acceptable payment terms, etc.

C
User Demotivators

Exhibit V-8 shows the analysis of reasons given by users for not using a TPM vendor. The three main reasons given were:

- Users are satisfied with the service received from the manufacturer of their equipment (70% of respondents).
- Users believe that manufacturers have a service advantage over TPMs (26% of respondents).
- Users are contractually tied to the manufacturer (11% of respondents).

EXHIBIT V-8

REASONS FOR NOT USING TPM CPU USERS—EUROPE

	Belgium	France	Germany	Holland	Italy	Norway	Spain	Sweden	Switz-erland	U.K.	TOTAL
Satisfied with Manufacturer	44	128	165	51	96	19	63	49	86	166	863
Manufacturer Ser-viceAdvantage	23	34	87	11	19	5	3	15	38	87	322
TPM Unable to Support Software	—	8	2	1	3	—	2	1	1	17	35
Tied to Manufac-turer by Contract	11	53	8	8	8	1	1	2	21	17	130
Fear of Vendor Response	1	5	1	—	1	—	—	1	—	10	19
Considered and Rejected TPM	6	14	10	4	2	—	—	3	5	20	64
Financial Weakness of TPM	1	3	2	—	—	—	—	—	2	7	15
Unaware/Not Been Approached by TPM	2	4	20	1	23	3	—	7	5	13	78
Other	14	23	19	6	9	—	—	7	12	29	119
Total No. of Non-TPM Users	95	196	199	76	141	26	71	72	133	274	1283

Note: Multiple responses allowed.

This exhibit also shows that:

- The principal reason for not using a TPM is that users are satisfied with the service they are currently receiving from the manufacturer of their equipment.

- Italy has the highest number of users that are unaware of TPM as an alternative, indicating perhaps that Italian TPM firms should consider more aggressive marketing campaigns.

- In France, the second most widely mentioned reason for not using a TPM was that users were contractually tied to the manufacturer. This may indicate a higher degree of concern on the part of manufacturers in France with regards to TPM competition than in other European countries.

- The fourth and fifth most frequent reasons users have not chosen a TPM vendor were unawareness of TPM and considering but rejecting TPM, mentioned by 6% and 5% of the respondents respectively. Once again this highlights the need for TPMs to be more active in promoting their services and calls for investigation into the reasons certain users rejected the idea of TPM.

- Overall, only a small proportion of users showed any signs of concern over TPMs' inability to support software, or the TPMs' perceived financial weakness.

Although user satisfaction with the service provided by the equipment manufacturer is traditionally the principal reason for not using TPM, there is an interesting change in the ranking of the most frequently mentioned reasons for not using TPM in 1988 in comparison with 1987.

As can be seen in Exhibit V-9, in 1988 users' perception of manufacturers having a service advantage over TPMs was ranked second, whilst in 1987 it ranked fourth.

The most notable change is the apparent increasing user awareness of TPM because in 1988 users' lack of awareness of TPM ranks fourth, whereas in 1987 it was the second most frequently given reason for not using a TPM.

EXHIBIT V-9

RANKING OF REASONS FOR NOT USING TPM 1988 & 1987

Reason for Not Using TPM	1988	1987
Satisfied with Manufacturer	1	1
Manufacturer Service Advantage	2	4
Tied to Manufacturer by Contract	3	3
Unaware of TPM	4	2
Sample Size	1,283	1,198

D
The Pricing Factor

Exhibit V-10 shows the analysis of TPM user satisfaction with pricing and the level of importance that users attach to this issue. In the interest of completeness, countries with cell size of less than five users have been included in the exhibit, but are not taken into consideration on a country basis as having a valid statistical representation. These countries are: Belgium, Norway, Spain and Switzerland.

The ratings in this exhibit are on a scale of 0 to 10, where 0 means 'not important' or 'not satisfied' and 10 means 'very important' or 'very satisfied'. Overall, the results show that users attach considerable importance to pricing, which is the principal reason why users choose a TPM.

The results also show that whilst users attach a high importance to the price of service, their satisfaction with pricing is in each case lower than the importance rating. This clearly indicates that users expect much higher cost savings than are actually received. TPM vendors should ensure that user dissatisfaction is identified and suitable responses formulated.

EXHIBIT V-10

AVERAGE TPM USER SATISFACTION & IMPORTANCE RATINGS* WITH PRICE OF MAINTENANCE

Country	Importance Rating (I/R)	Satisfaction Rating (S/R)	Sample Size	Standard Error I/R	Standard Error S/R
Belgium	7.7	8.0	3	0.98	0
France	8.9	5.9	8	0.57	0.82
Germany	9.1	8.0	8	0.33	0.35
Netherlands	8.2	6.5	11	0.36	0.52
Italy	7.2	7.0	5	0.52	0.80
Norway	7.0	6.0	1	-	-
Spain	8.0	9.0	1	-	-
Sweden	7.2	6.4	5	0.52	0.46
Switzerland	6.5	6.5	2	0.35	1.06
U.K.	9.1	8.1	19	0.23	0.34

* Ratings on a scale of 0-10
0 = Not Satisfied/Not Important
10 = Very Satisfied/Very Important

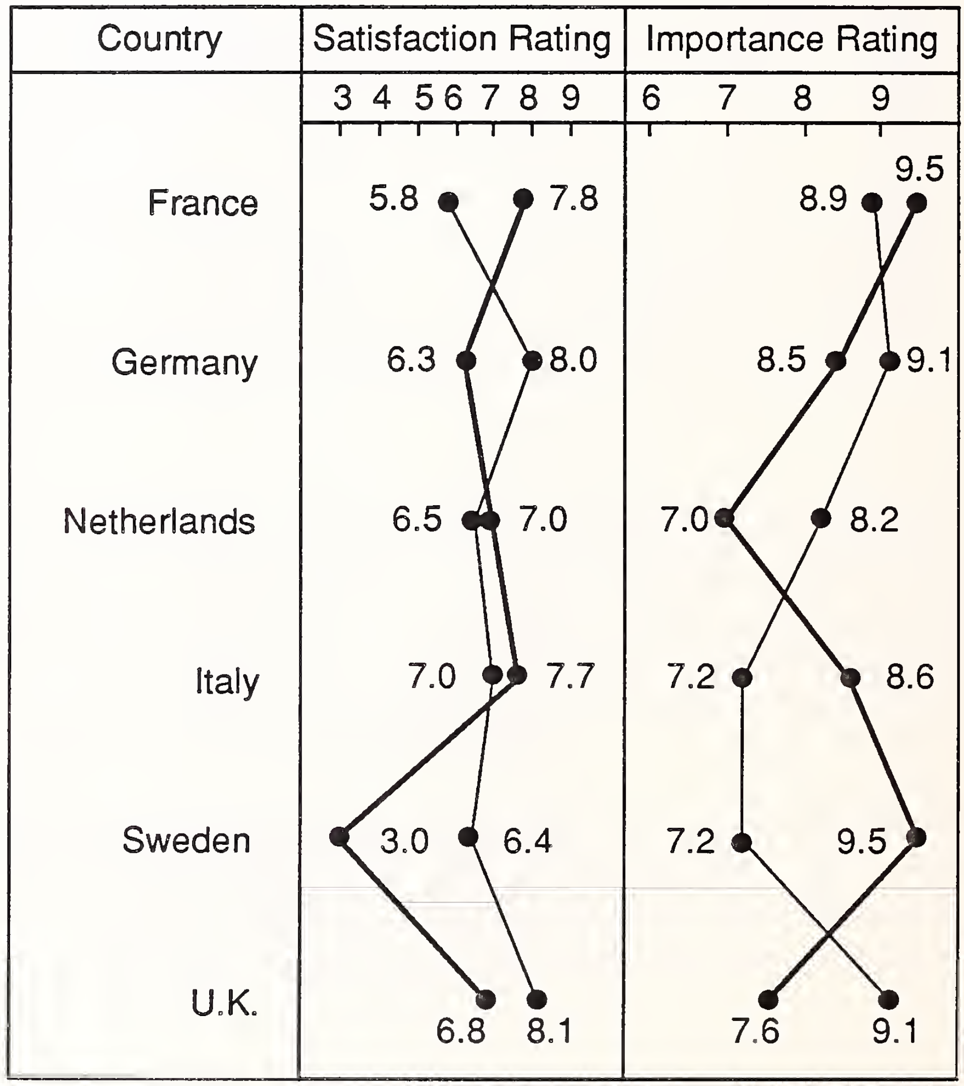
Exhibit V-11 shows a comparison of users' importance and satisfaction ratings with the price of maintenance from INPUT's 1988 and 1987 surveys. This exhibit indicates that:

- TPM users in the Netherlands and Italy appear to be less satisfied with the price of maintenance in 1988 than they were in 1987, and the importance they attach to it is higher in 1988 than it was in the previous year.

- TPM users in Germany, Sweden and the U.K. appear to be more satisfied with the price of maintenance in 1988, but, by the same token, they also rate the importance of maintenance pricing higher than they did in 1987.

EXHIBIT V-11

AVERAGE TPM USER SATISFACTION & IMPORTANCE RATINGS* WITH PRICE OF MAINTENANCE 1988 & 1987 COMPARISON



1988
1987

* Ratings on a scale of 0-10
0 = Not Satisfied/Not Important
10 = Very Satisfied/Very Important

VI

Conclusions and Recommendations

VI

Conclusions and Recommendations

The European independent maintenance market continues to show growth potential, and INPUT expects this sector of the market to expand overall. Users remain the principal driving force of the service market with their increased dependence on, and commitment to, information technology products in all sectors.

TPM vendors across Europe are becoming more aggressive in the marketing of their services, which clearly indicates the recognition by these firms of the increasing competitive nature of the market.

The planned deregulation of telecomms across Europe and the breaking down of trade barriers by 1992 will represent possible new service opportunities. One of the direct effects of deregulation, for example, will be the opening of previously captive markets into competitive environments, which will exert pressure on pricing. Pricing is an area in which TPMs have, from the user point of view, a distinct advantage over manufacturers.

A separate INPUT report *Pricing Trends—Western European Customer Services*, published in 1988 as part of the Customer Services Programme in Europe, provides a detailed assessment of pricing trend data from INPUT research. This research indicates a high level of price sensitivity on the part of users, with 20% of users believing that customer service can be described as:
- Expensive and not worth it.
- Too expensive.

This segment of the market is considered to be the most vulnerable to independent maintenance competition. It represents an area of opportu-

nity for independent maintenance vendors to capitalise on users' dissatisfaction with vendor services.

INPUT's research also reveals that most TPM vendors do not currently view competition from the manufacturers as a major inhibitor to their future growth. TPMs justify this view by highlighting the non-'independent' stance of the manufacturers.

The increased participation of manufacturers in the independent maintenance marketplace over the past year, however, is a clear indication of the manufacturers' intentions to become major independent maintenance suppliers. INPUT believes that in view of the tightening competitive conditions and slower growth, TPM vendors should no longer hold the complacent opinion that manufacturers' threat to TPM is not real.

Pioneered by Olivetti, manufacturers entering the market have introduced a new approach to service, namely: Total System and Service Management. This latest concept allows manufacturers to compete with TPMs as single-source maintenance providers.

Quality of service will continue to be one of the most important elements of service and will be the factor promoting future business and the reputation of all service vendors. The introduction of industry standards—BS 5750 / ISO 9000—for quality has reinforced the importance that all vendors should attach to this issue. As more TPM vendors obtain BS 5750 registration, user fears over the inability of TPMs to offer high quality of service will, to a large extent, be allayed.

In summary, INPUT recommends that TPM vendors evaluate new business opportunities and develop clear commercial strategies in order to adapt to the changing industry dynamics and new user requirements described in this report. Examples of these opportunities are:

- *Software Support* - In order to overcome the problems of reduced margins, which are a result of falling hardware equipment prices, TPMs can consider the possibility of expanding their services into new areas, such as software support. Although manufacturers have until now been the main source of software support services, TPMs can seek to overcome manufacturer protectionism in this area by means of:

  - Partnership agreements with computer and software vendors
  - Acquisition of software companies
  - Offering software support on 'standard' software, namely Unix

The advantages that can be gained from the ability to offer software support services include:

- Reduced lag on vendors
- Increased credibility resulting from the ability to offer a total service solution
- A wider breadth of knowledge and experience

Although TPMs can increase their revenues, by offering software support the following two factors should not be overlooked:

- Vendor resistance to allowing TPMs to engage in this area may remain high.
- The levels of investment required for offering software support are very high.

Ultimately, however, INPUT believes that the capability to offer systems software support may well be a deciding factor in competitive bids.

- *Specialisation* - With increased competition amongst TPMs and manufacturers active in independent maintenance, TPM vendors should have clear marketing strategies in order to sustain growth. INPUT recommends that vendors consider specialising in the servicing of specific product families or industry niche markets.

By successfully defining and subsequently marketing these strategies, vendors will gain and retain a competitive edge over vendors that have not clearly defined and implemented their approach to the market.

A

Appendix: Profiles of French TPMs

Company Profile

Country	France
Company	Alphadis
Address	38 Ave. Hoche 75008 Paris
Telephone	Country Code (33) Area Code (1) Number: 42-89-09-37

Company Information

Number of Service Centres	3
Number of Employees in Maintenance	22
Number of Engineers (Total)	17
- Field Engineers	9
- Bench Engineers	8
Revenues Derived from Maintenance	
- 1987 Revenues	-
- 1988 Forecast	-

Type of Equipment Maintained

Mainframes	IBM
Minis	IBM
Business PCs	IBM, Apple, Compaq, HP, Bull, Olivetti
Peripherals	Telex, ITT, Memorex, STC
Other Equipment	Modems - Network Controller

Notes:

Company Profile

Country	France
Company	Control Data
Address	27 Cours Des Petites Ecuries Lognes
Telephone	Country Code (33) Area Code (1) Number: 64-61-50-00

Company Information

Number of Service Centres	6
Number of Employees in Maintenance	50
Number of Engineers (Total)	50
- Field Engineers	-
- Bench Engineers	-

Revenues Derived from Maintenance	
- 1987 Revenues	FF 70 M*
- 1988 Forecast	-

Type of Equipment Maintained

Mainframes	IBM
Minis	IBM
Business PCs	IBM, Compaq, Zenith, Forum
Peripherals	IBM, Compaq, Zenith, Forum
Other Equipment	

Notes: * INPUT Estimate

Company Profile

Country	France
Company	Métroservice
Address	77-101 Ave. Du Vieux Ch. St. Denis BP 102 92232 Gennevilliers Cedex
Telephone	Country Code (33) Area Code (1) Number: 47-99-73-19

Company Information

Number of Service Centres	20
Number of Employees in Maintenance	245
Number of Engineers (Total)	150
- Field Engineers	-
- Bench Engineers	-

Revenues Derived from Maintenance

- 1987 Revenues	FF 105 M
- 1988 Forecast	FF 135 M

Type of Equipment Maintained

Mainframes	
Minis	Rexon Business Systems, Convergent Technology, Forum
Business PCs	All Major Manufacturers
Peripherals	All Major Manufacturers
Other Equipment	

Notes:

Company Profile

Country	France
Company	MIS
Address	17 Boulevard Ney 75018 Paris
Telephone	Country Code (33) Area Code (1) Number: 40-38-36-34

Company Information

Number of Service Centres	38
Number of Employees in Maintenance	220
Number of Engineers (Total)	200
- Field Engineers	180
- Bench Engineers	20
Revenues Derived from Maintenance	
- 1987 Revenues	FF 75 M
- 1988 Forecast	FF 110 M

Type of Equipment Maintained

Mainframes	IBM, Honeywell-Bull
Minis	IBM
Business PCs	All Major Manufacturers
Peripherals	All Major Manufacturers
Other Equipment	EFT-POS

Notes:

Company Profile

Country	France
Company	SMS
Address	9/15 Avenue Paul Doumer 92504 Rueil-Malmaison
Telephone	Country Code (33) Area Code (1) Number: 47-08-65-04

Company Information

Number of Service Centres	26
Number of Employees in Maintenance	400
Number of Engineers (Total)	-
- Field Engineers	-
- Bench Engineers	-

Revenues Derived from Maintenance

- 1987 Revenues	FF 93 M
- 1988 Forecast	FF 165 M

Type of Equipment Maintained

Mainframes	IBM 43XX, Bull, DEC
Minis	IBM, Wang, DEC, Bull
Business PCs	All Major Brands
Peripherals	All Major Brands
Other Equipment	Optical Disks, Scanners, Streamers, Laser Printers

Notes:

Company Profile

Country	France
Company	Sorbus
Address	Parc Du Colombier Rue Jules Saulnier 93200 St. Denis
Telephone	Country Code (33) Area Code (1) Number: 48-09-23-23

Company Information

Number of Service Centres	3
Number of Employees in Maintenance	100
Number of Engineers (Total)	60
- Field Engineers	-
- Bench Engineers	-

Revenues Derived from Maintenance

- 1987 Revenues	FF 34 M
- 1988 Forecast	FF 45 M

Type of Equipment Maintained

Mainframes	–
Minis	Bytex, Gandalf
Business PCs	All Major Manufacturers
Peripherals	All Major Manufacturers
Other Equipment	Telecomms Equipment

Notes:

Company Profile

Country	France
Company	Spectral
Address	22 Avenue des Nations Z.I. Paris Nord II 93420 Villepinte
Telephone	Country Code (33) Area Code (1) Number: 48-63-23-00

Company Information

Number of Service Centres	45
Number of Employees in Maintenance	250
Number of Engineers (Total)	160
- Field Engineers	110
- Bench Engineers	50

Revenues Derived from Maintenance

- 1987 Revenues	FF 109 M
- 1988 Forecast	FF 140 M

Type of Equipment Maintained

Mainframes	–
Minis	IBM, Altos, Gispac, Pertec, Ultimate
Business PCs	All Major Manufacturers
Peripherals	All Major Manufacturers
Other Equipment	

Notes:

B

Appendix: Profiles of Italian TPMs

Company Profile

Country	Italy
Company	Ciesse
Address	Via Venezia 67/6 Padova
Telephone	Country Code (39) Area Code (49) Number: 776588

Company Information

Number of Service Centres	26
Number of Employees in Maintenance	150
Number of Engineers (Total)	80
- Field Engineers	70
- Bench Engineers	10

Revenues Derived from Maintenance

- 1987 Revenues	It. Lira 18 B
- 1988 Forecast	It. Lira 20 B

Type of Equipment Maintained

Mainframes	IBM 43XX
Minis	IBM S34/36/38
Business PCs	IBM
Peripherals	IBM
Other Equipment	–

Notes:

Company Profile

Country	Italy
Company	Econocom
Address	Via Pasteur, 65 00142 Rome
Telephone	Country Code (39) Area Code (06) Number: 591-7741

Company Information

Number of Service Centres	5
Number of Employees in Maintenance	43
Number of Engineers (Total)	32
- Field Engineers	32
- Bench Engineers	-

Revenues Derived from Maintenance

- 1987 Revenues	It. Lira 5 B
- 1988 Forecast	It. Lira 6.5 B

Type of Equipment Maintained

Mainframes	IBM 4381
Minis	IBM 34/36/38
Business PCs	IBM
Peripherals	IBM
Other Equipment	–

Notes:

Company Profile

Country	Italy
Company	Ibimaint
Address	Milanofiori Palazzo E/4 Milano
Telephone	Country Code (39) Area Code (02) Number: 8224

Company Information

Number of Service Centres	25
Number of Employees in Maintenance	450
Number of Engineers (Total)	220
- Field Engineers	180
- Bench Engineers	40

Revenues Derived from Maintenance

- 1987 Revenues	It. Lira 26.5 B
- 1988 Forecast	It. Lira 40 B

Type of Equipment Maintained

Mainframes	IBM 4331/41/61/81
Minis	IBM S34/36/38
Business PCs	IBM, Olivetti & Compatible
Peripherals	IBM & Compatible
Other Equipment	–

Notes:

Company Profile

Country	Italy
Company	Inside
Address	Via G. Di Vittorio, 7 42100 Reggio Emilia
Telephone	Country Code (39) Area Code (0522) Number: 51-32-29

Company Information

Number of Service Centres	1
Number of Employees in Maintenance	7
Number of Engineers (Total)	3
- Field Engineers	3
- Bench Engineers	-

Revenues Derived from Maintenance

- 1987 Revenues	It. Lira 0.2 B
- 1988 Forecast	It. Lira 0.3 B

Type of Equipment Maintained

Mainframes	–
Minis	IBM 34/36
Business PCs	IBM & compatible
Peripherals	IBM & compatible
Other Equipment	–

Notes:

Company Profile

Country	Italy
Company	Restore S.r. L.
Address	Strada Per Cermusca, 1 20060 Bussero (Milano)
Telephone	Country Code (39) Area Code (02) Number: 950-38-112

Company Information

Number of Service Centres	3
Number of Employees in Maintenance	25
Number of Engineers (Total)	17
- Field Engineers	17
- Bench Engineers	-
Revenues Derived from Maintenance	
- 1987 Revenues	N/A
- 1988 Forecast	N/A

Type of Equipment Maintained

Mainframes	–
Minis	IBM
Business PCs	IBM & compatible
Peripherals	IBM & compatible
Other Equipment	–

Notes:

Company Profile

Country	Italy
Company	Sorbus
Address	Milanofiori Strada 7 Palazzo T3 Rozzano - Milano
Telephone	Country Code (39) Area Code (02) Number: 82270

Company Information

Number of Service Centres	11
Number of Employees in Maintenance	65
Number of Engineers (Total)	45
- Field Engineers	37
- Bench Engineers	8

Revenues Derived from Maintenance

- 1987 Revenues	It. Lira 6.0 B
- 1988 Forecast	It. Lira 6.7 B

Type of Equipment Maintained

Mainframes	
Minis	IBM, Convergent Technology, Texas Instruments, Olivetti
Business PCs	IBM, Convergent Technology, Texas Instruments, Olivetti
Peripherals	VDUs, Printers, Terminals
Other Equipment	Telex Automation, Telecomms Equipment

Notes:

C

Appendix: Profiles of Dutch TPMs

Company Profile

Country	Netherlands
Company	Business Solutions International
Address	Vijften Morgen, 5
	P.O. Box 620
	3900 AP Veenendaal
Telephone	Country Code (31) Area Code (08385)
	Number: 23190

Company Information

Number of Service Centres	1
Number of Employees in Maintenance	70
Number of Engineers (Total)	65
- Field Engineers	-
- Bench Engineers	-

Revenues Derived from Maintenance

- 1987 Revenues	Fl. 6.5 M
- 1988 Forecast	Fl. 10 M

Type of Equipment Maintained

Mainframes	–
Minis	DEC, IBM
Business PCs	DEC, IBM & Major Brands
Peripherals	DEC, IBM & Major Brands
Other Equipment	–

Notes:

Company Profile

Country	Netherlands
Company	Circle Information Systems
Address	Gallileilaan 35 3584 BC Utrecht
Telephone	Country Code (31) Area Code (30) Number: 333-414

Company Information

Number of Service Centres	4
Number of Employees in Maintenance	N/A
Number of Engineers (Total)	16
- Field Engineers	16
- Bench Engineers	-
Revenues Derived from Maintenance	
- 1987 Revenues	Fl. 2.5 M
- 1988 Forecast	Fl. 3 M

Type of Equipment Maintained

Mainframes	–
Minis	DEC VAX
Business PCs	IBM & Compatibles, Philips, Tulip
Peripherals	Printers, Disk Drives
Other Equipment	–

Notes:

Company Profile

Country	Netherlands
Company	DTC Service
Address	Huis Ter Heideweg, 24 P.O. Box 2 3700 AA Zeist
Telephone	Country Code (31) Area Code (03404) Number: 27222

Company Information

Number of Service Centres	1
Number of Employees in Maintenance	55
Number of Engineers (Total)	33
- Field Engineers	23
- Bench Engineers	10

Revenues Derived from Maintenance

- 1987 Revenues	Fl. 30 M*
- 1988 Forecast	–

Type of Equipment Maintained

Mainframes	–
Minis	DEC, Qantel, Stratus
Business PCs	IBM, Philips, Olivetti
Peripherals	All Major Brands
Other Equipment	–

Notes: * INPUT Estimate

Company Profile

Country	Netherlands
Company	Geveke Electronics
Address	Donauweg 10 1043AJ Amsterdam
Telephone	Country Code (31) Area Code (20) Number: 586-1420

Company Information

Number of Service Centres	6
Number of Employees in Maintenance	270
Number of Engineers (Total)	220
- Field Engineers	135
- Bench Engineers	85
Revenues Derived from Maintenance	
- 1987 Revenues	Fl. 36 M
- 1988 Forecast	Fl. 40 M

Type of Equipment Maintained

Mainframes	–
Minis	MAI, IBM S34/36/38
Business PCs	All Major Manufacturers
Peripherals	All Major Manufacturers
Other Equipment	Over 30 Brands of Data Communications Equipment

Notes: Board Repair Centre for Printers in Amsterdam.

Company Profile

Country	Netherlands
Company	Thyssen Field Service
Address	Postbus 670 3900 Veenendaal
Telephone	Country Code (31) Area Code (08385) Number: 35111

Company Information

Number of Service Centres	2
Number of Employees in Maintenance	55
Number of Engineers (Total)	45
- Field Engineers	30
- Bench Engineers	15
Revenues Derived from Maintenance	
- 1987 Revenues	-
- 1988 Forecast	-

Type of Equipment Maintained

Mainframes	–
Minis	DEC
Business PCs	DEC
Peripherals	DEC & Compatible
Other Equipment	Networks

Notes:

D

Appendix: Profiles of Spanish TPMs

Company Profile

Country	Spain
Company	ELTEC
Address	Esteban Terrades, 7 Planta Primera 08023 Barcelona
Telephone	Country Code (34) Area Code (03) Number: 2125800

Company Information

Number of Service Centres	8
Number of Employees in Maintenance	120
Number of Engineers (Total)	100
- Field Engineers	80
- Bench Engineers	20

Revenues Derived from Maintenance	
- 1987 Revenues	SP 530 M
- 1988 Forecast	SP 750 M

Type of Equipment Maintained

Mainframes	-
Minis	IBM
Business PCs	All Major Manufacturers
Peripherals	All Major Manufacturers
Other Equipment	Networks

Notes:

Company Profile

Country	Spain
Company	Cero Informatica
Address	Victor de La Serna, 280 280106 Madrid
Telephone	Country Code (34) Area Code (01) Number: 458-2451

Company Information

Number of Service Centres	3
Number of Employees in Maintenance	19
Number of Engineers (Total)	12
- Field Engineers	12
- Bench Engineers	-
Revenues Derived from Maintenance	
- 1987 Revenues	-
- 1988 Forecast	-

Type of Equipment Maintained

Mainframes	IBM 43XX
Minis	IBM S3X
Business PCs	IBM
Peripherals	All Major Manufacturers
Other Equipment	-

Notes:

Company Profile

Country	Spain
Company	IPM
Address	General Mitre, 93 08028 Barcelona
Telephone	Country Code (34) Area Code (03) Number: 2114988

Company Information

Number of Service Centres	2
Number of Employees in Maintenance	45
Number of Engineers (Total)	20
- Field Engineers	20
- Bench Engineers	-
Revenues Derived from Maintenance	
- 1987 Revenues	-
- 1988 Forecast	-

Type of Equipment Maintained

Mainframes	-
Minis	IBM
Business PCs	IBM
Peripherals	IBM & Other Major Manufacturers
Other Equipment	-

Notes:

Company Profile

Country	Spain
Company	Morsa
Address	La Calle Carpe 144 08013 Barcelona
Telephone	Country Code (34) Area Code (03) Number: 245 7103

Company Information

Number of Service Centres	15
Number of Employees in Maintenance	60
Number of Engineers (Total)	55
- Field Engineers	45
- Bench Engineers	10
Revenues Derived from Maintenance	
- 1987 Revenues	-
- 1988 Forecast	-

Type of Equipment Maintained

Mainframes	-
Minis	IBM, DEC
Business PCs	IBM, DEC
Peripherals	All Major Manufacturers
Other Equipment	-

Notes:

Company Profile

Country	Spain
Company	SMS International España
Address	Orense, 28 Madrid 28020
Telephone	Country Code (34) Area Code (01) Number: 456 3753

Company Information

Number of Service Centres	6
Number of Employees in Maintenance	24
Number of Engineers (Total)	20
- Field Engineers	-
- Bench Engineers	-

Revenues Derived from Maintenance

- 1987 Revenues	SP 200 M
- 1988 Forecast	SP 300 M

Type of Equipment Maintained

Mainframes	IBM, DEC, HP, Siemens, Wang
Minis	IBM, DEC, HP, Siemens, Wang
Business PCs	IBM, Invest, Bull
Peripherals	IBM, DEC, HP, Siemens, Wang, Bull
Other Equipment	-

Notes:

E

Appendix: Profiles of Swedish TPMs

Company Profile

Country	Sweden
Company	Complete Computer Care
Address	Box 2034 17202 Sunbyberg
Telephone	Country Code (46) Area Code (08) Number: 757-9400

Company Information

Number of Service Centres	29
Number of Employees in Maintenance	300
Number of Engineers (Total)	100
- Field Engineers	-
- Bench Engineers	-

Revenues Derived from Maintenance	
- 1987 Revenues	SK 62 M
- 1988 Forecast	SK 74 M

Type of Equipment Maintained

Mainframes	-
Minis	IBM, DEC, Data General
Business PCs	All Major Manufacturers
Peripherals	All Major Manufacturers
Other Equipment	-

Notes:

Company Profile

Country	Sweden
Company	Databolim
Address	Box 11564 S-10061 Stockholm
Telephone	Country Code (46) Area Code (08) Number: 702 3500

Company Information

Number of Service Centres	14
Number of Employees in Maintenance	119
Number of Engineers (Total)	99
- Field Engineers	74
- Bench Engineers	15

Revenues Derived from Maintenance

- 1987 Revenues	SK 11 M
- 1988 Forecast	SK 12.5 M

Type of Equipment Maintained

Mainframes	-
Minis	Convex, Modcomp, Data General, Prime
Business PCs	DDF (Own Brand)
Peripherals	Fujitsu, Dataproducts, Printronix
Other Equipment	CDC Disk Drives

Notes:

Company Profile

Country	Sweden
Company	Telub
Address	Box 278
	35105 Vaxjo
Telephone	Country Code (46) Area Code (0470)
	Number: 71700

Company Information

Number of Service Centres	17
Number of Employees in Maintenance	220
Number of Engineers (Total)	140
- Field Engineers	124
- Bench Engineers	16
Revenues Derived from Maintenance	
- 1987 Revenues	SK 100 M
- 1988 Forecast	SK 115 M

Type of Equipment Maintained

Mainframes	-
Minis	DEC, Data General, IBM
Business PCs	All Major Manufacturers
Peripherals	All Major Manufacturers
Other Equipment	-

Notes:

F

Appendix: Profiles of U.K. TPMs

Company Profile

Country	United Kingdom
Company	CSS
Address	Wilsthorpe Road Long Eaton Nottingham NG10 3LL
Telephone	Country Code (44) Area Code (0602) Number: 735900

Company Information

Number of Service Centres	6
Number of Employees in Maintenance	22
Number of Engineers (Total)	18
- Field Engineers	16
- Bench Engineers	2

Revenues Derived from Maintenance

- 1987 Revenues	£ 1.0 M
- 1988 Forecast	£ 1.5 M

Type of Equipment Maintained

Mainframes	-
Minis	VAX 750/730/725/MicroVax II, PDP
Business PCs	Tandon
Peripherals	Emulex, CDC, Kennedy, Printronix, CITOH, DEC, Western Peripherals
Other Equipment	-

Notes:

Company Profile

Country	United Kingdom
Company	Compact 3000
Address	The Limes High Holborn Sedgley - Dudley D43 1SU
Telephone	Country Code (44) Area Code (0902) Number: 880088

Company Information

Number of Service Centres	2
Number of Employees in Maintenance	15
Number of Engineers (Total)	15
- Field Engineers	12
- Bench Engineers	3

Revenues Derived from Maintenance

- 1987 Revenues	£ 0.5 M
- 1988 Forecast	£ 0.5 M

Type of Equipment Maintained

Mainframes	-
Minis	Data General, Digico, Honeywell
Business PCs	IBM, Apricot, Amstrad, Data General, Honeywell
Peripherals	Printers
Other Equipment	-

Notes:

Company Profile

Country	United Kingdom
Company	Computeraid Services
Address	21 Invincible Road Farnborough Hants GU14 7BR
Telephone	Country Code (44) Area Code (0252) Number: 548888

Company Information

Number of Service Centres	11
Number of Employees in Maintenance	310
Number of Engineers (Total)	220
- Field Engineers	-
- Bench Engineers	-
Revenues Derived from Maintenance	
- 1987 Revenues	£ 8 M
- 1988 Forecast	£ 10 M

Type of Equipment Maintained

Mainframes	-
Minis	DEC
Business PCs	IBM, Compaq, Olivetti, Televideo
Peripherals	Printers
Other Equipment	Communications Equipment, POS

Notes:

Company Profile

Country	United Kingdom
Company	Computer Engineering Services Ltd.
Address	Concord House 121 Bellhouse Road Sheffield S5 6HP
Telephone	Country Code (44) Area Code (0742) Number: 420332

Company Information

Number of Service Centres	1
Number of Employees in Maintenance	17
Number of Engineers (Total)	14
- Field Engineers	10
- Bench Engineers	4

Revenues Derived from Maintenance

- 1987 Revenues	£ 0.40 M
- 1988 Forecast	£ 0.50 M

Type of Equipment Maintained

Mainframes	-
Minis	Hewlett-Packard HP 250 Systems and HP3000
Business PCs	HP 125/150, HP Vectra, IBM & Compatible
Peripherals	Printers, Disk Drives, Printers
Other Equipment	-

Notes:

Company Profile

Country	United Kingdom
Company	Computer Field Maintenance
Address	Excell House Trust Ind. Estate, Wilbury Way Hitchin - Herts SG4 0UZ
Telephone	Country Code (44) Area Code (0462) Number: 421511

Company Information

Number of Service Centres	22
Number of Employees in Maintenance	712
Number of Engineers (Total)	480
- Field Engineers	386
- Bench Engineers	66

Revenues Derived from Maintenance

- 1987 Revenues	£ 21.4 M
- 1988 Forecast	£ 30 M

Type of Equipment Maintained

Mainframes	IBM
Minis	All Major Manufacturers
Business PCs	All Major Manufacturers
Peripherals	All Major Manufacturers
Other Equipment	-

Notes:

Company Profile

Country	United Kingdom
Company	Computer Peripheral Maintenance
Address	Alloy House, 5 Mercian Close Cirencester Glos GL7 1LT
Telephone	Country Code (44) Area Code (0285) Number: 69806

Company Information

Number of Service Centres	1
Number of Employees in Maintenance	15
Number of Engineers (Total)	10
- Field Engineers	-
- Bench Engineers	10

Revenues Derived from Maintenance

- 1987 Revenues	£ 400 K
- 1988 Forecast	£ 750 K

Type of Equipment Maintained

Mainframes	-
Minis	-
Business PCs	-
Peripherals	-
Other Equipment	Repair of Disk Drives & Winchester Disks

Notes:

Company Profile

Country	United Kingdom
Company	Computer Repair Centre Ltd.
Address	17 Thame Park Road Thame Oxon OX9 3XD
Telephone	Country Code (44) Area Code (084) Number: 421-6861

Company Information

Number of Service Centres	2
Number of Employees in Maintenance	55
Number of Engineers (Total)	45
- Field Engineers	20
- Bench Engineers	25
Revenues Derived from Maintenance	
- 1987 Revenues	£ 1.5 M
- 1988 Forecast	£ 3.0 M

Type of Equipment Maintained

Mainframes	-
Minis	Motorola, Delta Series, Perg CAD/CAM Workstations
Business PCs	IBM, Victor, Grid, Tandon
Peripherals	-
Other Equipment	Workshop Repair on Sub-systems: Winchester Disk (Clean Room), Tape Streamers, PCB Repair, Hi-Res Monitor - PSU Repair

Notes: Repairs on manufacturers' product for themselves and their OEMs.

Company Profile

Country	United Kingdom
Company	DDT Maintenance Ltd.
Address	68-70 Turin Road Welwyn Garden City Oxon AL7 1BD
Telephone	Country Code (44) Area Code (07073) Number: 34774

Company Information

Number of Service Centres	10
Number of Employees in Maintenance	263
Number of Engineers (Total)	185
- Field Engineers	125
- Bench Engineers	60
Revenues Derived from Maintenance	
- 1987 Revenues	£ 7.5 M
- 1988 Forecast	-

Type of Equipment Maintained

Mainframes	-
Minis	-
Business PCs	All Major Manufacturers
Peripherals	All Major Manufacturers
Other Equipment	-

Notes:

Company Profile

Country	United Kingdom
Company	DPCE (UK)
Address	Cumberland House Old Bracknell Lane West Bracknell Berks RG12 4AE
Telephone	Country Code (44) Area Code (0344) Number: 485666

Company Information

Number of Service Centres	34
Number of Employees in Maintenance	500
Number of Engineers (Total)	400
- Field Engineers	385
- Bench Engineers	15
Revenues Derived from Maintenance	
- 1987 Revenues	£ 20 M
- 1988 Forecast	-

Type of Equipment Maintained

Mainframes	All Major Manufacturers
Minis	All Major Manufacturers
Business PCs	All Major Manufacturers
Peripherals	All Major Manufacturers
Other Equipment	-

Notes:

Company Profile

Country	United Kingdom
Company	Data Logic Ltd.
Address	Queens House East Greenhill Way Harrow Middx HA1 1YR
Telephone	Country Code (44) Area Code (01) Number: 863-0383

Company Information

Number of Service Centres	19
Number of Employees in Maintenance	-
Number of Engineers (Total)	170
- Field Engineers	150
- Bench Engineers	20

Revenues Derived from Maintenance	
- 1987 Revenues	£ 8.0 M
- 1988 Forecast	£ 9.0 M

Type of Equipment Maintained

Mainframes	-
Minis	DEC, IBM
Business PCs	All Major Manufacturers
Peripherals	VDUs, Printers
Other Equipment	Networks, Communications Equipment

Notes:

Company Profile

Country	United Kingdom
Company	Digital Computer Services Ltd.
Address	Network House Oxford Road Denham - Uxbridge Mddx UB9 4DN
Telephone	Country Code (44) Area Code (0895) Number: 74141

Company Information

Number of Service Centres	5
Number of Employees in Maintenance	61
Number of Engineers (Total)	49
- Field Engineers	37
- Bench Engineers	12

Revenues Derived from Maintenance

- 1987 Revenues	£ 3.6 M
- 1988 Forecast	£ 5.1 M

Type of Equipment Maintained

Mainframes	DEC
Minis	DEC, IBM, Wang
Business PCs	All Major Manufacturers
Peripherals	VDUs, Printers, Monitors
Other Equipment	Modems, EPOS, Multiplexers Communications Equipment

Notes:

Company Profile

Country	United Kingdom
Company	Econocom Computer Maintenance
Address	Atlas House, London Road Hindhead Surrey
Telephone	Country Code (44) Area Code (0428) Number: 73-65-47

Company Information

Number of Service Centres	3
Number of Employees in Maintenance	30
Number of Engineers (Total)	21
- Field Engineers	21
- Bench Engineers	-

Revenues Derived from Maintenance	
- 1987 Revenues	£ 1.5 M
- 1988 Forecast	£ 3 M

Type of Equipment Maintained

Mainframes	IBM
Minis	IBM
Business PCs	IBM & Compatible
Peripherals	IBM & All Major Manufacturers
Other Equipment	-

Notes:

Company Profile

Country	United Kingdom
Company	Extel Systems Support
Address	House Park Kings Langley Herts WD4 8LZ
Telephone	Country Code (44) Area Code (09277) Number: 66144

Company Information

Number of Service Centres	24
Number of Employees in Maintenance	370
Number of Engineers (Total)	260
- Field Engineers	200
- Bench Engineers	60

Revenues Derived from Maintenance	
- 1987 Revenues	£ 12 M
- 1988 Forecast	-

Type of Equipment Maintained

Mainframes	ICL, IBM
Minis	ICL, IBM
Business PCs	Most Leading Manufacturers
Peripherals	VDUs, Terminals, Printers
Other Equipment	Network Systems

Notes:

Company Profile

Country	United Kingdom
Company	Jaecrow Systems Services Ltd.
Address	29/31 Lower Coombe Street Croydon CR9 1LX
Telephone	Country Code (44) Area Code (01) Number: 680 9191

Company Information

Number of Service Centres	2
Number of Employees in Maintenance	104
Number of Engineers (Total)	60
- Field Engineers	-
- Bench Engineers	-

Revenues Derived from Maintenance

- 1987 Revenues	£ 2.0 M
- 1988 Forecast	£ 3.2 M

Type of Equipment Maintained

Mainframes	-
Minis	-
Business PCs	IBM & Compatible
Peripherals	-
Other Equipment	-

Notes:

Company Profile

Country	United Kingdom
Company	KMS Datacare
Address	Mill Lane Worthfield Birmingham B31 2RW
Telephone	Country Code (44) Area Code (021) Number: 4112345

Company Information

Number of Service Centres	16
Number of Employees in Maintenance	100
Number of Engineers (Total)	80
- Field Engineers	55
- Bench Engineers	25

Revenues Derived from Maintenance

- 1987 Revenues	£ 4.5 M
- 1988 Forecast	£ 7.0 M

Type of Equipment Maintained

Mainframes	-
Minis	IBM, Unisys
Business PCs	All Major Manufacturers
Peripherals	All Major Manufacturers
Other Equipment	-

Notes:

Company Profile

Country	United Kingdom
Company	Kode Computers Ltd.
Address	Kode House, Drakes Way Greenbridge Swindon - Wilts SN3 3JL
Telephone	Country Code (44) Area Code (0793) Number: 511345

Company Information

Number of Service Centres	8
Number of Employees in Maintenance	163
Number of Engineers (Total)	110
- Field Engineers	80
- Bench Engineers	30

Revenues Derived from Maintenance	
- 1987 Revenues	£ 5.2 M
- 1988 Forecast	-

Type of Equipment Maintained

Mainframes	-
Minis	Pertec, Comart
Business PCs	All Major Manufacturers
Peripherals	All Major Manufacturers
Other Equipment	Telecomms, Telex, Facsimile, Disk Drive Repair

Notes:

Company Profile

Country	United Kingdom
Company	Logitek Plc.
Address	Bradley Lane Standish Greater Manchester WN6 0XQ
Telephone	Country Code (44) Area Code (0257) Number: 426644

Company Information

Number of Service Centres	5
Number of Employees in Maintenance	70
Number of Engineers (Total)	50
- Field Engineers	30
- Bench Engineers	20
Revenues Derived from Maintenance	
- 1987 Revenues	-
- 1988 Forecast	-

Type of Equipment Maintained

Mainframes	-
Minis	Altos (Full Range)
Business PCs	Wyse (Full Range)
Peripherals	Genicom, Dowty Communications
Other Equipment	3 Com LANs

Notes:

Company Profile

Country	United Kingdom
Company	Mainstay Computer Cover Ltd.
Address	Mainstay House 10 Eden Place Cheadle Cheshire
Telephone	Country Code (44) Area Code (061) Number: 428-0880

Company Information

Number of Service Centres	5
Number of Employees in Maintenance	175
Number of Engineers (Total)	80
- Field Engineers	70
- Bench Engineers	10
Revenues Derived from Maintenance	
- 1987 Revenues	£ 6.8 M
- 1988 Forecast	-

Type of Equipment Maintained

Mainframes	IBM & Compatible
Minis	IBM & Compatible
Business PCs	IBM & Compatible
Peripherals	Decision Data, Memorex, Nokia Datatrade, Link, IBM
Other Equipment	-

Notes:

Company Profile

Country	United Kingdom	
Company	Megabyte Ltd.	
Address	Rooley Lane Dudley Hill Bradford BO4 7SQ	
Telephone	Country Code (44) Number: 688541	Area Code (0274)

Company Information

Number of Service Centres	3
Number of Employees in Maintenance	N/A
Number of Engineers (Total)	11
- Field Engineers	9
- Bench Engineers	2
Revenues Derived from Maintenance	
- 1987 Revenues	£ 0.5 M
- 1988 Forecast	£ 0.7 M

Type of Equipment Maintained

Mainframes	-
Minis	DEC VAX & PDP 11, including compatibles
Business PCs	Apricot - All Products
Peripherals	CDC, Emulex, Fujitsu, Printronix, Terminals
Other Equipment	-

Notes:

Company Profile

Country	United Kingdom
Company	Meridian Computer Engineering Ltd.
Address	4, Crown Business Centre Horton Road West Drayton Middx UB7 8HZ
Telephone	Country Code (44) Area Code (01) Number: 890-1440

Company Information

Number of Service Centres	3
Number of Employees in Maintenance	45
Number of Engineers (Total)	35
- Field Engineers	30
- Bench Engineers	5

Revenues Derived from Maintenance

- 1987 Revenues	£ 3.8 M
- 1988 Forecast	£ 5.0 M

Type of Equipment Maintained

Mainframes	IBM
Minis	IBM, DEC
Business PCs	-
Peripherals	-
Other Equipment	-

Notes:

Company Profile

Country	United Kingdom
Company	Nationwide Systems Engineering
Address	Nationwide House Victoria Way Burgess Hill West Sussex RH15 9TW
Telephone	Country Code (44) Area Code (0446) Number: 45211/4

Company Information

Number of Service Centres	3
Number of Employees in Maintenance	31
Number of Engineers (Total)	25
- Field Engineers	15
- Bench Engineers	10

Revenues Derived from Maintenance

- 1987 Revenues	£ 1.0 M
- 1988 Forecast	£ 1.5 M

Type of Equipment Maintained

Mainframes	-
Minis	Convergent Technology
Business PCs	All Major Manufacturers
Peripherals	All Major Manufacturers
Other Equipment	-

Notes:

Company Profile

Country	United Kingdom
Company	Nelson Computer Services
Address	St. Johns Court, Bacup Road Rawtenstall Rossendale - Lancs BB4 7PA
Telephone	Country Code (44) Area Code (0706) Number: 217755

Company Information

Number of Service Centres	3
Number of Employees in Maintenance	50
Number of Engineers (Total)	28
- Field Engineers	24
- Bench Engineers	4
Revenues Derived from Maintenance	
- 1987 Revenues	£ 1.0 M
- 1988 Forecast	£ 1.7 M

Type of Equipment Maintained

Mainframes	-
Minis	-
Business PCs	IBM, Tandon, Olivetti, Apricot, Amstrad, Apple, Sirius, Victor
Peripherals	Printers: All Major Manufactuers, Plotters
Other Equipment	Networks, Forms Handling Machines, Punch Card Equipment

Notes:

Company Profile

Country	United Kingdom
Company	Penny & Giles Computer Peripherals
Address	6 Airfield Way Christchurch Dorset BH23 3TT
Telephone	Country Code (44) Area Code (0202) Number: 477461

Company Information

Number of Service Centres	1
Number of Employees in Maintenance	25
Number of Engineers (Total)	20
- Field Engineers	15
- Bench Engineers	5

Revenues Derived from Maintenance

- 1987 Revenues	N/A
- 1988 Forecast	N/A

Type of Equipment Maintained

Mainframes	-
Minis	-
Business PCs	Televideo, Amstrad, Epson, Tandem, Videograph
Peripherals	Lear Siegler, Zentec, Epson, Mannesmann Tally, Honeywell, Hewlett-Packard, Televideo
Other Equipment	-

Notes:

Company Profile

Country	United Kingdom
Company	Q-Com Maintenance Ltd.
Address	Monaco House Bristol Street Birmingham B5 7AS
Telephone	Country Code (44) Area Code (021) Number: 622-7165

Company Information

Number of Service Centres	3
Number of Employees in Maintenance	18
Number of Engineers (Total)	14
- Field Engineers	12
- Bench Engineers	2

Revenues Derived from Maintenance

- 1987 Revenues	£ 0.25 M
- 1988 Forecast	£ 0.35 M

Type of Equipment Maintained

Mainframes	-
Minis	DEC
Business PCs	All Major Manufacturers
Peripherals	All Major Manufacturers
Other Equipment	-

Notes:

Company Profile

Country	United Kingdom
Company	Quest Support Services Ltd.
Address	School Lane Chandlers Ford Hampshire
Telephone	Country Code (44) Area Code (0703) Number: 266321

Company Information

Number of Service Centres	6
Number of Employees in Maintenance	117
Number of Engineers (Total)	86
- Field Engineers	69
- Bench Engineers	17
Revenues Derived from Maintenance	
- 1987 Revenues	£ 3.4 M
- 1988 Forecast	£ 5.0 M

Type of Equipment Maintained

Mainframes	-
Minis	Nova, Computer Automation, DEC, Quest
Business PCs	All Major Manufacturers
Peripherals	All Major Manufacturers
Other Equipment	CAD/Graphics Systems, Networks, Controllers, Communications Equipment

Notes:

Company Profile

Country	United Kingdom
Company	Syscom Plc
Address	Kelvin House The Broadway Dudley West Midlands DY1 4PY
Telephone	Country Code (44) Area Code (0384) Number: 236701

Company Information

Number of Service Centres	4
Number of Employees in Maintenance	48
Number of Engineers (Total)	38
- Field Engineers	28
- Bench Engineers	10
Revenues Derived from Maintenance	
- 1987 Revenues	-
- 1988 Forecast	-

Type of Equipment Maintained

Mainframes	-
Minis	DEC PDP & VAX
Business PCs	-
Peripherals	-
Other Equipment	-

Notes:

Company Profile

Country	United Kingdom
Company	Sysmatic
Address	Arkwright Road Reading Berks RG2 0LS
Telephone	Country Code (44) Area Code (0734) Number: 311011

Company Information

Number of Service Centres	5
Number of Employees in Maintenance	60
Number of Engineers (Total)	40
- Field Engineers	30
- Bench Engineers	10

Revenues Derived from Maintenance

- 1987 Revenues	£ 1.8 M
- 1988 Forecast	£ 2.7 M

Type of Equipment Maintained

Mainframes	-
Minis	DEC, IBM
Business PCs	IBM & Compatibles
Peripherals	CDC, Fujitsu, Kennedy, Cifer, DEC, Emulex, Able, Dilog, Data Product
Other Equipment	-

Notes:

Company Profile

Country	United Kingdom
Company	Systems Reliability
Address	400 Dallow Road Luton Bedfordshire LU1 1UR
Telephone	Country Code (44) Area Code (0582) Number: 455455

Company Information

Number of Service Centres	10
Number of Employees in Maintenance	370
Number of Engineers (Total)	110
- Field Engineers	90
- Bench Engineers	20

Revenues Derived from Maintenance

- 1987 Revenues	£ 5.0 M
- 1988 Forecast	£ 6.5 M

Type of Equipment Maintained

Mainframes	-
Minis	IBM, Alpha, Altos
Business PCs	All Major Manufacturers
Peripherals	VDUs, Printers, Terminals
Other Equipment	Magnetic Tape Streamers, Data Transfer, Comms. Equipment

Notes:

Company Profile

Country	United Kingdom
Company	TPM Ltd.
Address	24 Longmoor Road Liphook Hants GU30 7NY
Telephone	Country Code (44) Area Code (0428) Number: 723819

Company Information

Number of Service Centres	1
Number of Employees in Maintenance	8
Number of Engineers (Total)	7
- Field Engineers	6
- Bench Engineers	1

Revenues Derived from Maintenance

- 1987 Revenues	£ 0.3 M
- 1988 Forecast	£ 0.4 M

Type of Equipment Maintained

Mainframes	-
Minis	Convergent Technology, DMS Hinet
Business PCs	IBM & Compatible
Peripherals	All Major Manufacturers
Other Equipment	-

Notes:

Company Profile

Country	United Kingdom
Company	TPM Computer Services Ltd.
Address	Unit 17 Central Trading Estates Staines Middlesex TW18 4VW
Telephone	Country Code (44) Area Code (0784) Number: 65641

Company Information

Number of Service Centres	2
Number of Employees in Maintenance	25
Number of Engineers (Total)	20
- Field Engineers	17
- Bench Engineers	3

Revenues Derived from Maintenance

- 1987 Revenues	£ 1.2 M
- 1988 Forecast	£ 2.0 M

Type of Equipment Maintained

Mainframes	All Major Manufacturers
Minis	All Major Manufacturers
Business PCs	All Major Manufacturers
Peripherals	All Major Manufacturers
Other Equipment	-

Notes:

G

Appendix: Profiles of West German TPMs

Company Profile

Country	West Germany	
Company	Sorbus	
Address	Josefinstrasse, 13	
	4000 Dusseldorf	
Telephone	Country Code (49)	Area Code (0211)
	Number: 139 080	

Company Information

Number of Service Centres	6
Number of Employees in Maintenance	110
Number of Engineers (Total)	100
- Field Engineers	70
- Bench Engineers	30
Revenues Derived from Maintenance	
- 1987 Revenues	DM 25 M
- 1988 Forecast	DM 30 M

Type of Equipment Maintained

Mainframes	IBM
Minis	IBM
Business PCs	IBM & Compatible
Peripherals	IBM & Compatible
Other Equipment	-

Notes:

Company Profile

Country	West Germany
Company	Tekserv
Address	Hahnstrasse, 32-35 Frankfurt 71
Telephone	Country Code (49) Area Code (069) Number: 66910

Company Information

Number of Service Centres	12
Number of Employees in Maintenance	120
Number of Engineers (Total)	100
- Field Engineers	-
- Bench Engineers	-
Revenues Derived from Maintenance	
- 1987 Revenues	DM 46 M
- 1988 Forecast	-

Type of Equipment Maintained

Mainframes	-
Minis	MAI, DEC, Wang, Altos, Philips, Datapoint, Point 4
Business PCs	All Major Manufacturers
Peripherals	All Major Manufacturers
Other Equipment	Networks

Notes:

Company Profile

Country	West Germany
Company	Telub Bitronic
Address	Strahlenberger Weg, 16 6000 Frankfurt am 70
Telephone	Country Code (49) Area Code (069) Number: 618056

Company Information

Number of Service Centres	6
Number of Employees in Maintenance	50
Number of Engineers (Total)	40
- Field Engineers	-
- Bench Engineers	-
Revenues Derived from Maintenance	
- 1987 Revenues	DM 5.1 M
- 1988 Forecast	DM 6.9 M

Type of Equipment Maintained

Mainframes	-
Minis	Cromemco, Convergent Tech., Datagraph, IBM
Business PCs	Minolta, Sharp, IBM, Tandon, Victor, Panasonic
Peripherals	AST Research, Data Products, Genicom, Centronics, Fujitsu
Other Equipment	-

Notes:

Company Profile

Country	West Germany
Company	SMS International
Address	Frankenallee, 260 6000 Frankfurt/Main 1
Telephone	Country Code (49) Area Code (069) Number: 7580030

Company Information

Number of Service Centres	8
Number of Employees in Maintenance	65
Number of Engineers (Total)	43
- Field Engineers	-
- Bench Engineers	-
Revenues Derived from Maintenance	
- 1987 Revenues	DM 5 M
- 1988 Forecast	DM 9.5 M

Type of Equipment Maintained

Mainframes	IBM
Minis	IBM
Business PCs	IBM & Compatible
Peripherals	IBM & All Major Manufacturers
Other Equipment	-

Notes:

Company Profile

Country	West Germany
Company	XTEC Computer Systems
Address	Niederurseler Allee 8-10 D-6236 Eschborn 1
Telephone	Country Code (49) Area Code (6196) Number: 70120

Company Information

Number of Service Centres	4
Number of Employees in Maintenance	70
Number of Engineers (Total)	50
- Field Engineers	40
- Bench Engineers	10
Revenues Derived from Maintenance	
- 1987 Revenues	DM 23 M*
- 1988 Forecast	-

Type of Equipment Maintained

Mainframes	-
Minis	Arix
Business PCs	IBM, Compaq, Tandon
Peripherals	Data Product, Mannesmann Tally, OKI Data, IBM, Tandberg
Other Equipment	-

Notes: *INPUT Estimate

Company Profile

Country	West Germany
Company	Wigo EDV. Wartung GmbH
Address	Untergrasse, 70 D-6097 Trebur
Telephone	Country Code (49) Area Code (061) Number: 477021

Company Information

Number of Service Centres	22
Number of Employees in Maintenance	110
Number of Engineers (Total)	110
- Field Engineers	98
- Bench Engineers	12

Revenues Derived from Maintenance

- 1987 Revenues	DM 10 M
- 1988 Forecast	DM 17 M

Type of Equipment Maintained

Mainframes	IBM
Minis	IBM
Business PCs	IBM, Compaq
Peripherals	IBM, Memorex, Compaq
Other Equipment	-

Notes:

H

Appendix: Profiles of Other European TPMs

Company Profile

Country	Austria
Company	S & S Elektronik and Computer Tecnic
Address	Wilhemstrasse, 9 A 3430 Tulln
Telephone	Country Code (43) Area Code (02272) Number: 3363

Company Information

Number of Service Centres	7
Number of Employees in Maintenance	50
Number of Engineers (Total)	43
- Field Engineers	23
- Bench Engineers	20

Revenues Derived from Maintenance

- 1987 Revenues	AS 45 M
- 1988 Forecast	AS 66 M

Type of Equipment Maintained

Mainframes	
Minis	
Business PCs	All Major Manufacturers
Peripherals	All Major Manufacturers
Other Equipment	Banking Terminals-Network ATMs

Notes:

Company Profile

Country	Belgium
Company	Geveke Electronics Service
Address	Pontbeeglaan, 43 1730 Zellig
Telephone	Country Code (32) Area Code (02) Number: 467 1711

Company Information

Number of Service Centres	3
Number of Employees in Maintenance	40
Number of Engineers (Total)	33
- Field Engineers	25
- Bench Engineers	8
Revenues Derived from Maintenance	
- 1987 Revenues	-
- 1988 Forecast	-

Type of Equipment Maintained

Mainframes	
Minis	IBM, ALTOS, MAI
Business PCs	All Major Manufacturers
Peripherals	All Major Manufacturers
Other Equipment	

Notes:

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Appendix: Reconciliation of 1988 and 1987 Forecasts

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Appendix: Reconciliation of 1988 and 1987 Forecasts

Each year, INPUT examines the forecasts it provided in previous years in the light of the new data obtained from:

- Current year research.
- Actual performance of vendors compared to forecasts.
- Reassessment of market drivers and inhibitors and long-term industry trends.

Exhibit I-1 shows the comparison of the forecasts made for the six largest individual country TPM markets in Europe in this report with those included in INPUT's 1987 TPM report.

EXHIBIT I-1

MARKET FORECAST RECONCILIATION

Country	1987 Forecast of 1987 Market	1988 Assessment of 1987 Market	AAGR Forecast in 1987 Report (1986-1992) (Percent)	AAGR Forecast in 1988 Report (1987-1993) (Percent)
France	595 M FF	700 M FF	21	18
Italy	90 B Lira	75 B Lira	25	15
Netherlands	125 M fl	130 M fl	19	16
Sweden	250 M SK	180 M SK	19	9
U.K.	165 M £	170 M £	16	15
West Germany	120 M DM	140 M DM	18	14

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Appendix: Questionnaire

Independent Maintenance in Western Europe, 1988-1993

Vendor Questionnaire

I. GENERAL

QU: 1 Respondent Name ______________________

QU: 2 Title ______________________

QU: 3 Company ______________________

QU: 4 Address ______________________

____

____

QU: 5 Country ______________________

QU: 6 Telephone ______________________

II. COMPANY PROFILE

QU: 7 Number of Service Centres __________

QU: 8 Number of Employees in Maintenance __________

QU: 9 a. Total Number of Engineers __________

b. Number of Field Engineers __________

c. Number of Bench Engineers __________

QU: 10 Equipment Maintained

a. Mainframes ______________________

____

b. Minis ______________________

____

c. PCs ______________________

____

d. Peripherals ______________________

____

e. Other ______________________

____

III. FINANCIAL INFORMATION

		1987	1988 (Forecast)	Currency
QU: 11	a. Total Revenues	________	________	________
	b. Total European Revenues	________	________	________
QU: 12	a. TPM Revenues	________	________	________
	b. European TPM Revenues	________	________	________

IV. ISSUES

QU: 13 What, in your opinion, are the factors contributing to the growth of TPM?

____

____

QU: 14 What, in your opinion, are the factors hindering the growth of TPM?

____

____

QU: 15 Has your company been involved in a merger or acquisition? If so, when?

A. Merger

- Name of Company merged with ______________________
- Date of Merger ______________________
- Price Paid ______________________
- Please indicate name of newly merged companies, if applicable ______________________

B. Acquisition

- Company Acquired ________________
- Date of Acquisition ________________
- Price Paid ________________

QU: 16 Who do you consider to be your main source of competition in the TPM market?

____

____

QU: 17 What services does your company offer other than pure hardware maintenance?

____

____

QU: 18 Are you planning to expand these services in the future? Please give details.

____

____

QU: 19 What are your views on manufacturers' involvement in TPM?

V. PRICING SERVICES

QU: 20 In general, how do your prices compare with the manufacturers' maintenance prices?

____

____

QU: 21 Maintenance contracts: What is included in your standard maintenance contract?

- What are the hours of coverage for standard contracts?

Hours ________ to ________

Days ________ to ________

- Is longer coverage available? ____Yes ____No
- What is the percentage uplift for extra coverage?
  - Evenings __________%
  - Saturdays __________%
  - Week End __________%
  - 24 x 7 __________%
- Do you offer any long-term contracts? ____Yes ____No
- If yes, for what duration? Do you give any discounts with these?

Duration	2 years __________	Discount __________%
	3 years __________	Discount __________%
	5 years __________	Discount __________%